02.10.97

elmeg
Kommunikationstechnik

Description

Operation

Setup

Installation

Getting Started

Congratulations! And many thanks for purchasing one of our elmeg C68 - elmeg C88 ”business class” products.
Your new ISDN PABX system comes with a host of useful and easy-to-use features. It will add utmost convenient to your communications accross the Integrated Services Digital Network.

This user manual has been written to assist you in using your elmeg C68 - elmeg C88 ISDN PABX system.

No matter whether you are using your elmeg C68 - elmeg C88 in a residential or business environment, you will soon find out that it offers you a complete set of features that leaves nothing to be desired. Discover how much convenience it adds to using telecommunication services.

We recommend that you take a few minutes to learn more about the functionality your elmeg elmeg C68 - elmeg C88 has to offer.

Important note for elmeg C68 users!

The present manual describes both the model elmeg C68 and model elmeg C88 PABX systems.
Given the fact that the only difference between the two units is the ISDN bus port # 2 ”S0-TLN”, which isn’t present with the elmeg C68, this manual doesn’t contain any extra instructions for either model. Please note this fact when installing, setting up or using the unit.

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1 General Notes

1.1 General Information for elmeg C66 - elmeg C88 Users

The PABX system has been designed for normal conditions of use.
Tampering with the safety covers of your PABX system and repair through unauthorized personnel can cause serious risks for the user.
Install and store PABX system in a dry place. Any fluids entering the enclosure can cause electric shock or destroy the electronic circuitry inside.
Do not connect or disconnect any leads, cables or connection cords during thunderstorms or other atmospheric discharges.
Route any leads, cables or connection cords so as to avoid the risk of persons stumbling over them.

Use a slightly moist cloth to clean your PABX system , or use anti-static tissue. Do not use thinner, other solvents or dry tissue to clean.

Do not connect any terminals to your PABX system other than those supplying SELV voltage (Safety Equipment Low Voltage) and/or meeting the requirements of ETS 300047. In the majority of cases, this requirement can be fulfilled by using only type-approved terminal equipment.

1.2 Power Outages

A general outage of utility power (230V AC line voltage) disrupts operation of your PABX system, leaving you unable to make or receive calls. When operating your system at a point-to-multipoint access, you can install the type NSP backup power subassembly to protect ISDN terminals capable of running on exchange office battery power.

When line power returns, all extension-specific features which have been selected by users throughout your facility, for example inbound and outbound connections, automatic redialing, call waiting disable or internal call rerouting will be lost. However, any features configured using the setup program will remain unaffected by a power outage.

CAUTION! **Unplug the 230 VAC power cord before removing the safety cover from the cable terminal bay and proceeding to connect cables.**
Replace the cable terminal cover before restoring 230 V AC power to the unit.

2 PABX System Description

Your new product product is a state-of-the-art ISDN PABX system (Private Automatic Branch Exchange) designed to operate on a DSS1 European standard ISDN network. Your PABX system has four 4 S_0 interface ports. One port is used as a dedicated attachment interface to the ISDN network, two ports are used to connect inhouse ISDN equipment to the unit, and the remaining ISDN port can be optionally used for inhouse equipment or as an external ISDN network access interface. The dedicated ISDN network access port can be configured for the point-to-multipoint or point-to-point ISDN access modes. You may connect a maximum of eight analog terminals. Further options include a door intercom and external music on hold. You may allocate any number (or direct dial-in suffix with a point-to-point access) between 00...99 to your inhouse extensions. Your analog terminal equipment needs to support tone dialing and the Flash key feature in order to function properly. Analog terminals having only pulse dialing capability are restricted to features that do not use the Flash key. Please note that not all commercially available ISDN terminals support keypad access to the features offered by your PABX system. Any terminal equipment attached to the unit needs to be approved by your national standardization bodies or your network operator, if so required.

2.1 Regulatory Information

In most cases, you may directly proceed to connect your PABX system to a single network termination unit provided by your network operator without having to apply for a permit or consult with any specialists. However, if you wish to connect your PABX system to two ISDN network terminations, you may have to order that particular access configuration from your network operator, who will in most cases have the installation work done by a specialized subcontractor.

2.2 Cleaning

You can clean your PABX system easily when you take the following precautions:
Wipe your PABX system with a slightly moist cloth, or use anti-static tissue. Do not use thinner, other solvents or dry tissue to clean. Dry tissue may carry electrostatic charges that can cause defects in electronic circuits. Avoid the ingress of moisture and subsequent damage to your PABX system.

3 How to Get Your PABX System Up and Running

Unpacking

- Unpack the PABX system and accessories from the shipping carton and check the contents against the packing list printed in the Installation section of this manual.

Description

- First of all, please read the PABX system description.

Installation

- Please read the installation instructions.
- Determine the location where you want to install your PABX system.
- Install the PABX system.
- Install the desired number of ISDN wall jacks for your inhouse ISDN bus.
- Install the desired number of wall jacks for your analog terminals.
- Connect your ISDN and analog terminals and make sure you have their instruction manuals handy.
- Connect the battery.

Getting Started

- Prepare the unit for operation on a

  point-to-multipoint access (see Getting Started on Page 155)

  or

  point-to-point access (see Getting Started on Page 157).

Setup

- Set up your PABX system as required (see Setup on Page 57).

Operation

- Check your setup for the proper choice of features using the Operation section (see Page 19) as a reference.

You have now completed the installation, setup and checkout of your PABX system. Enjoy staying connected with your new PABX system.

4 PABX System Shipping Configuration

- The battery is disconnected.
- The password is set to **0000**.
- The ISDN network access mode is set to "DSS1 point-to-multipoint".
- An ISDN exchange line can be acquired with the **0** or ***0** key.
- The MSN entry is void.
- Incoming calls make the terminals on the active call distribution list ring, depending on the calling service.
- The"Day" call distribution list is activated.
- Terminals are not authorized to select a call distribution list.
- The following numbers are entered in the call distribution lists.

  "Day" call distribution list:

  10 = Telephony
  11 = Data
  12 = Group 3 telefax
  13 = Group 4 telefax

  "Night" call distribution list:

  14 = Telephony
  15 = Data
  16 = Group 3 telefax
  17 = Group 4 telefax

- Inhouse extension numbers:

  First inhouse ISDN bus (S0-Tln 1):
  10...19.

  Second inhouse ISDN bus (S0-Tln 2):
  20...29.

  Third inhouse ISDN bus (S0-Tln 3):
  30...39.

Analog ports (a/b1...a/b8):
40...47.

- The analog ports are preset to tone dialing with the Flash key.
- The attached terminals can access an international line.
- The caller number is displayed to the called party.
- The Don't Disturb feature is not activated.
- The door intercom is not activated.
- The door intercom call distribution list is void.
- Terminals can accept calls from the door intercom.
- The abbreviated dialing list is void.
- Music on hold: Callers will hear the first built-in music on hold tune.
- The software revision at shipping time is stored instead of the current time.
- The charge counters are set to 0.
- The charge meter printout is disabled.
- The unit stores up to 200 charge data records for the attached terminals.
- The analog charge unit counter is enabled for the analog ports a/b1 and a/b2.

5 LED Indicators on Your PABX system

Attached to the rear side of the PABX system enclosure (see Installation, Figure 2) there are three LED status indicators. Located on the right-hand side below the cover lid, they are visible from outside the enclosure.

Green LED	illuminated:	Indicates full PABX system operation.
Green LED	extinguished:	Hardware fault (Yellow and red identify the type of fault).
Yellow LED Red LED	illuminated: illuminated:	When an error forces you to call the field serviceplease inform service about the status of this LED.
All LEDs	illuminated:	Startup phase (Initialization) subsequent to powerup.
All LEDs	extinguished:	Hardware reset or loss of AC line power supply to the PABX system .
Green LED	flashing:	Informs the user that the battery is disconnected or needs to be replaced (see chapter Installation).

Subsequent to powerup, the three LEDs will be illuminated for 6...10 seconds. After completing the startup phase, the red and yellow LEDs will turn off and the green LED will indicate error-free system operation.

6 Symbols, Earpiece Signals and Ringer signals

Please note: Terminals may differ in their earpiece signals, ringer signals and operating procedures.

You may not be able to use all features with the specified sequence of keys. Please refer to the instruction manuals supplied with your ISDN terminals for more detail on handling particular features.

6.1 Symbols Used

This symbol instructs you to pick up the handset.

This symbol indicates call status.
You have picked up the handset of your telephone set.

This symbol instructs you to replace the handset to your telephone set.

This symbol indicates an audible signal from a terminal. Example: Your telephone set is ringing.

This symbol instructs you to dial a number.

1 ... **0**,
✳, **#**

Either symbol instructs you to dial a particular numeric key or other function key.

0 ... **9**,
✳,

The setup enables you to change the inhouse extension numbers and ISDN exchange line access digits. This symbol instructs you to dial any numeric key or other key that is not used by a dedicated PABX system function.

R

This symbol instructs you to press the Flash key.
In-call dialing on analog terminals with tone dialing capability requires that you press the Flash key before dialing a specific sequence of keys, for example in order to initiate a ”broker’s call”.

This symbol indicates that an acknowledgement signal is sounding from the handset.

This symbol indicates a conference call.

ISDN

This symbol indicates a feature that can only be accessed by ISDN terminals.

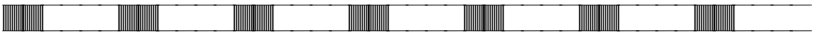
a/b This symbol indicates a feature that can only be accessed by analog terminals.

6.2 Earpiece Signals a/b

The PABX system uses the following earpiece signals while exchanging signalling information with telephone sets.

Inhouse Dial Tone (440 Hz)

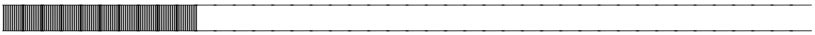
Inhouse Dial Tone. This is the tone you will hear after picking up the handset. It indicates that you can dial now. After 20 seconds the busy tone overrides the dial tone. If this happens, hang up, then pick the handset back up again. This will restore the internal dial tone.



Busy Tone and Error Signal (440 Hz)

Busy Tone. This tone sounding from the handset of your telephone set indicates that the desired external subscriber or inhouse extension is not available at the moment.

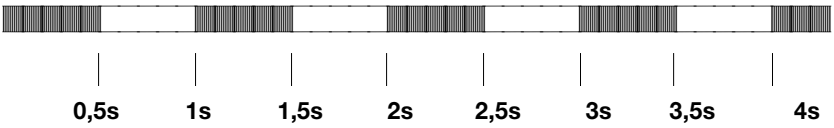
Error Signal. This tone sounding from the handset of your telephone set indicates that the desired function is not available, the selected feature has not been set up properly or the selected feature has been deleted.

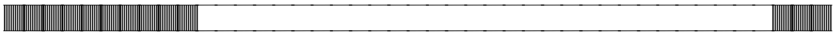


Acknowledgement Signal (440 Hz)

This tone indicates that your entry has been accepted.

Signal Timing





Inhouse Ringing Tone (440 Hz)

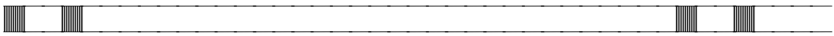
Ringing Tone. This tone indicates that the telephone is ringing at the inhouse extension or external subscriber you are calling.

Special Dial Tone (440 Hz and 500 Hz)

This tone indicates that, for example, the internal call rerouting feature has been activated for your telephone set.

Office Dial Tone (425 Hz)

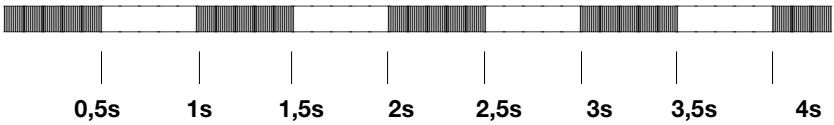
This is the permanent tone you will hear when you have claimed an outbound ISDN line.



Call Waiting Signal (440 Hz)

Call Waiting Signal (analog two-wire terminals only). This tone indicates that a second external subscriber is calling while you are in a telephone conversation. The call waiting signal will persist for a maximum of 30 seconds.

Signal Timing



6.3 Ringer Signals

a/b

The following charts illustrate the timing of the ringer signals.

Inhouse Call

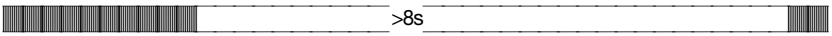
You are being called by an inhouse extension. This may either be a direct call or an enquiry call.

Incoming Call, Reverted Call, Callback

Incoming Call: You are receiving a call from an external subscriber.

Reverted Call: You have tried to transfer a call, but the receiving party hasn't accepted it. After approximately 30 seconds the system reverts the call to your extension, giving you 60 seconds to pick it up again.

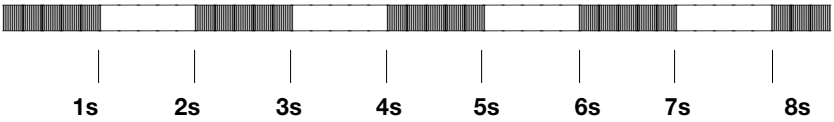
Callback: You will be called automatically when a subscriber, who has been busy before, hangs up.



Doorbell Call

Doorbell call. When a visitor rings the doorbell at your front-door intercom, all telephone sets on the door intercom call distribution list will ring for approximately one minute as shown below.

Signal Timing



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7 Inhouse & Inbound/Outbound Connections

a/b-ISDN

The examples given in the following operating instructions refer to a simple telephone connection, that is a call established between any two subscribers or inhouse extensions. Also, the instructions relating to analog telephone sets cover only the functionality offered by telephone sets or other terminals with tone dialing capability and a fully functional Flash key.

7.1 Accepting Calls

a/b-ISDN

Your telephone is ringing.

Pick up the handset.

Have your conversation with the caller.

Hang up.

7.2 Call Pickup (incoming calls only)

a/b-ISDN

On a nearby desk, an incoming call makes a telephone set attached to your PABX system ring. You wish to accept this call on your telephone set.

Pick up the handset. You will hear the inhouse dial tone.

Dial .

You are now connected with the caller.

7.3 Inhouse Connections

a/b-ISDN

Any telephone call, telefax or data transmission between on-premise analog and ISDN terminals is an inhouse connection. Contrarily, any connection between an analog terminal and an ISDN terminal attached to the point-to-multipoint ISDN access is an outbound call you will be charged for by your network operator.

7.4 Making Inhouse Calls

a/b-ISDN

You wish to establish an inhouse connection with an extension attached to your PABX system.

Pick up the handset. You will hear the inhouse dial tone.

Dial up the desired inhouse extension. You will hear the ringing tone from the earpiece, indicating that the desired inhouse extension is being called.

The desired inhouse party picks up the handset.

Have your conversation with the desired party.

Replace the handset to terminate the inhouse call or let the other party hang up. You will hear the busy tone. Replace the handset. This will terminate your inhouse connection.

7.5 Outbound Connections

a/b-ISDN

Your PABX system features one or two external ISDN access ports. You can use the two B-channels offered by an ISDN access to run two external connections at a time, even with two different parties. You can, for example, call an external client while transferring data to another client at the same time. With a point-to-point ISDN access, any incoming call to the PABX system that contains an ”0" as the direct dial-in suffix or a non-existing direct dial-in number, will make all the telephone sets on the current call distribution list ring and the master bell (if the unit is equipped with the door intercom subassembly) ring.

When you initiate an outbound call with your PABX system, the unit automatically sends the service identifier programmed for the calling analog extension or stored in the ISDN terminal to the receiving subscriber.

Please note: ISDN terminals attached directly to a point-to-multipoint access and the inhouse ISDN bus may exhibit different earpiece signals, ringer signals and require other operating procedures than analog terminals connected to the PABX system. This is not due to technical shortcomings of the PABX system but rather dependent on the ISDN products in use.

7.6 Making Outbound Calls

a/b-ISDN

You wish to establish a connection with an external subscriber or an inhouse extension attached to your point-to-multipoint access.

Pick up the handset. You will hear the inhouse dial tone.

0 or **✱ 0** — If you wish to make a call via any available ISDN exchange line, dial **0** or **✱ 0**.

To acquire an exchange line via a particular ISDN network access port, dial the following:

✱ 8 1 — To initiate an outbound call via ISDN network access port #1, dial **✱ 8 1**.

✱ 8 2 — To initiate an outbound call via ISDN network access port #2, dial **✱ 8 2**.

You will hear the office dial tone.

If you hear the busy tone after dialing 0, 81 or 82, your telephone set is not authorized or the ISDN exchange line is busy.

Dial the desired subscriber number.

You will hear the ringing tone from the earpiece, indicating that the external subscriber is being called. The called subscriber picks up the handset.

Make your call.

Hang up.

7.7 Block Dialing (preparatory dialing)

a/b

The block dialing feature lets the user compose a complete subscriber number at his or her terminal, send it to the PABX system for intermediate storage and initiate the dialing procedure afterwards. Some networks may demand that you use block dialing in order to get through to the remote terminal you wish to call. For more detail on block dialing, please refer to the instructions manual supplied with your ISDN terminal. You can also use block dialing to address an inhouse extension.

	Pick up the handset. You will hear the inhouse dial tone.
✳ 5 5	Dial the block dialing digit ✳ 5 5.
0	To use any ISDN network access port of your PABX system that is currently available, dial 0.
or	
✳ 0	Alternatively, dial ✳ 0.
	To use the ISDN network access port of your choice, proceed as follows:
✳ 8 1	To call via ISDN network access port #1: Dial ✳ 8 1.
or	
✳ 8 2	To call via ISDN network access port #2: Dial ✳ 8 2.
	Dial the desired subscriber number.
#	Initiate dialing by pressing the # key. This will send your dialing request to the office exchange system.
	You will hear the ringing tone from the earpiece, indicating that the external subscriber is being called.
	The called subscriber picks up his or her handset.
	Make your call.
	Terminate your call by hanging up.

7.8 Line Access Management

a/b-ISDN

This feature is only available if you have two outgoing ISDN lines. You can use the PABX system setup to preselect an ISDN line to be used by a particular terminal or set of terminals. This feature is, for example, useful if two companies share the PABX system or if you need a dedicated line for priority calls, allowing the connection charges to be exactly allocated to either company and their terminal equipment. This line access preselection setting cannot be overriden by acquiring a particular ISDN line.

7.9 Automatic ISDN Line Acquisition

a/b-ISDN

The PABX system supports a special procedure that allows individual extensions to acquire an outgoing ISDN line either automatically or manually. With this feature activated, you will receive immediate ISDN line access after picking up the handset. You will hear the office dial tone, prompting you to dial an external subscriber number. If you wish to dial an inhouse number, pick up the handset and press the ✱ key to switch to inhouse dialing. If you wish to make an inhouse call but receive the busy tone after picking up the handset (all outgoing ISDN lines busy), you should disable the automatic exchange line acquisition feature, hang up and pick up the handset again. You will then hear the inhouse dial tone.

7.9.1 Enabling Automatic Exchange Line Acquisition

	Pick up the handset. You will hear the inhouse dial tone.
✱52	Dial ✱52.
	You will hear the acknowledgement signal .
	Replace the handset to activate the feature.

7.9.2 Inhouse Dialing

	Pick up the handset. You will hear the office dial tone.
✱	Dial ✱ to switch to inhouse dialing.
	You can dial up inhouse extensions now.

7.9.3 Disabling Automatic Exchange Line Acquisition (ISDN line not busy)

Pick up the handset. You will hear the office dial tone.

Dial ✳#52 to deactivate the feature.

You will hear the acknowledgement signal .

You can dial up inhouse extensions now.

Make your inhouse call.

Hang up. The feature will remain disabled.

7.9.4 Disabling Automatic Exchange Line Acquisition (ISDN line busy)

Pick up the handset. You will hear the busy tone.

Dial #52 to deactivate the feature.

You will hear the acknowledgement signal .

You can dial up inhouse extensions now.

Make your inhouse call.

Hang up. The feature will remain disabled.

8 Team Call

a/b-ISDN

This feature can only be used with a point-to-multipoint access. In the setup, you can allocate up to 8 inhouse extensions to an MSN. When an inhouse party dials this MSN, all terminals included in this setup item will ring.

9 Transferring Calls

a/b-ISDN

9.1 Transferring Calls with Prior Notice

a/b-ISDN

You wish to transfer an inhouse call or external call to another extension, notifying the receiving party beforehand.

- The party put on hold will hear music on hold, if selected in the setup.

During a telephone conversation with an external subscriber you wish to transfer the call to another inhouse extension.

R

Press the Signaling key. You will hear the inhouse dial tone from the earpiece.

Dial up the desired inhouse extension. You will hear the ringing tone from the earpiece, indicating that the desired extension is being called. The called inhouse party picks up the handset.

(If you hear the busy tone, press the Signaling key R to restore the call to your telephone.)

Make your inhouse call, notifying the called party of the external subscriber waiting for him or her.

Hang up.

The called inhouse extension accepts the call.

If you have an analog telephone set and the called party is busy, you can restore the call by pressing the Flash key.

9.2 Connecting Two External Subscribers Subsequent to an Enquiry Call

Please note that ISDN terminals use special keypad features or a dedicated key to connect the two external subscribers involved in an enquiry call situation.

When you wish to connect the two external subscribers involved in an enquiry call, you should be aware of the following:

- While the two external subscribers talk, two B-channels will be occupied at your PABX system.
- Whoever has initiated the call in the first place, they will pay for the call charges. For example, when you have called one external party, then made an enquiry call to another external party and finaly connected them with each other, you will pay for two calls. Contrarily, when you have received a call and made a subsequent enquiry call to a third party, the first caller will pay for himself, and you will have to pay only for the enquiry call.

[ ]	You are making an enquiry call to an external party, putting the first party on hold. You wish to connect both parties and withdraw from the conversation.
R	Press the R key.
* 4	Press * key, followed by the 4 key.
[ ]	Hang up.

By hanging up, you will connect the remaining parties with each other.

9.3 Transferring Calls without Prior Notice

a/b-ISDN

You can transfer calls to a third party without prior notice (immediate transfer). To transfer an ongoing call to another party on your premises without giving prior notice, simply dial the desired extension number and hang up. The extension set will ring, allowing the called party to pick up the handset and accept the call.

You are making a call.

R — Press the Signaling key. You will hear the inhouse dial tone from the earpiece.

Dial up the desired inhouse extension. You will hear the ringing tone from the earpiece, indicating that the desired extension is being called.

R — (If you hear the busy tone, press the Signaling key once more to restore the call to your telephone.)

Replace the handset. The desired extension is being called. The called inhouse party picks up the handset and accepts the call.

9.4 Enquiry Call

a/b-ISDN

The enquiry call feature enables you to interrupt an inhouse or external call and make a second call, referred to as an enquiry call. This feature puts the first caller or called party on hold, so he or she won't be able to listen in on your enquiry call. After terminating your enquiry call, you can continue with your first call. The party put on hold will hear music on hold, if selected in the setup.

During an ongoing call, you wish to make an enquiry call.

R — When using an analog telephone, press the Flash key. You will hear the inhouse dial tone from the earpiece.

Dial up the desired inhouse extension. You will hear the ringing tone from the earpiece, indicating that the inhouse extension is being called. The called party picks up the handset.

Make your enquiry call.

To terminate the enquiry call, press the cutoff key of your ISDN telephone set (terminal-specific).

or | or

R ✱ 1 | When using an analog terminal, press the Flash key R followed by ✱ 1 to terminate the second call and return to the first party.

| Continue with the first call.

9.5 Broker's Call (terminal-specific) a/b-ISDN

The broker's call feature allows you to switch between two inhouse parties, two external subscribers, or an inhouse party and an external subscriber and talk to either party in turn. The external subscriber will hear music on hold, if selected in the setup.

| During an ongoing call you wish to make an enquiry call.

R | When using an analog telephone set, press the Flash key. When using an ISDN telephone set, press the Signaling key. You will hear the inhouse dial tone from the earpiece, while the first is being put on hold.

| Dial up the desired party. You will hear ringing tone from the earpiece, indicating that the party is being called. The called party picks up the handset.

| Make your enquiry call.

R ✱ 2 | When using an analog telephone set press the Flash key, followed by ✱ 2, to switch between the two parties.

| Continue with your first call.

or | or

R | When using an ISDN telephone set press the Signaling key to switch between the two parties.

| Continue with your call.

| Hang up. Please note that when you terminate a broker's call with one inhouse party and one external party, you will connect the two remaining parties by hanging up! If you hang up on two external subscribers, the current connection will be terminated and the connection put on hold will reoccur as a "reverted call".

10 Automatic Callback

Each inhouse party can choose to make one automatic callback or ISDN exchange line reservation request. The feature requested last (callback or ISDN line reservation) overrides all previous requests. Access to this feature requires an ISDN terminal with in-call keypad dialing capability. Please note that automatic callback is only supported for the first MSN stored in any ISDN terminal. This feature will be automatically cancelled at 0:00 hours.

10.1 Automatic Callback on Busy

a/b-ISDN

You dial up an inhouse extension that is busy. You will hear the busy tone. Dial ✱4 and hang up. As soon as the party replaces the handset to his or her telephone, your telephone set will ring.

This function is only available with telephone sets that support in-call tone dialing!

Pick up the handset. You will hear the inhouse dial tone.

Dial up the desired inhouse extension. You will hear the busy tone from the earpiece.

✱4

Dial ✱4.

You will hear the acknowledgement signal, followed by the busy tone.

Replace the handset.

When the busy party hangs up, your telephone set will ring.

Your telephone is ringing.

When you pick up the handset, the extension you have requested a callback for will be called. If he or she picks up the phone, you can finally make your call.

10.2 Automatic Callback on No Answer

a/b-ISDN

You dial up an inhouse extension. The called party doesn ‘t respond and you hear nothing but the ringing tone. Dial *4 and hang up. If the person returns to his or her desk and makes a call, your telephone set will ring after he or she has hung up.

This function is only available with telephone sets that support in-call tone dialing!

Pick up the handset. You will hear the inhouse dial tone.

Dial the desired extension number. You will hear the ringing tone from the earpiece.

Dial ✱4. You will hear the acknowledgement signal, followed by the busy tone.

Replace the handset.

As soon as the called party hangs up for the first time after returning to his or her desk, your telephone set will ring.

Your telephone is ringing.

When you pick up the handset, the extension you have requested a callback for will be called. If he or she picks up the phone, you can finally make your call.

10.3 Cancelling an Automatic Callback Request

a/b-ISDN

Pick up the handset. You will hear the inhouse dial tone.

Dial #4.

Wait for the the acknowledgement signal, followed by the inhouse dial tone.

Hang up. The feature has been cancelled now.

11 Reserving an ISDN Exchange Line a/b-ISDN

Each inhouse party can choose to make one automatic callback or ISDN exchange line reservation request. The feature requested last (callback or ISDN line reservation) overrides al previous requests. Access to this feature requires an ISDN terminal with in-call keypad dialing capability. If you wish to call an external subscriber, but the outbound ISDN line is busy, dial ✱4. When the ISDN exchange line is released, your telephone will ring to inform you that the line is available now. All reservation requests will be automatically cancelled at 0:00 hours. This feature requires telephone sets that support in-call dialing.

	Pick up the handset. You will hear the inhouse dial tone.
0 or ✱0	If you wish to use any available ISDN line, dial 0 or ✱0.
	To reserve an ISDN exchange line, dial:
✱81	✱81 = port #1.
✱82	✱82 = port #2.
	The ISDN exchange line is busy.
✱4	Dial ✱4. You will hear the acknowledgement signal, followed by the busy tone.
	Hang up. The ISDN exchange line has been reserved now.
	Your telephone is ringing.
	Pick up the handset. You will hear the inhouse dial tone.
0 or ✱0	Dial 0 or ✱0.
	To reserve an ISDN exchange line, dial:
✱81	✱81 = port #1
✱82	✱82 = port #2.
	You will hear the office dial tone.
	Dial the desired subscriber number.

11.1 Cancelling an ISDN Exchange Line Reservation

a/b-ISDN

Pick up the handset. You will hear the inhouse dial tone.

#4 Dial #4.

Wait for the acknowledgement signal, followed by the inhouse dial tone.

Hang up. The feature has been disabled now.

12 Three-Party Conference

a/b

Please note that ISDN telephone sets may require terminal-specific operating procedures. A conference involves three parties, two of which may be external subscribers. The conference is terminated when the initiating party hangs up. Either party who has been admitted to the conference can hang up at any time, leaving the initiating subscriber and the third party behind. You can initiate a three-party conference from within an ongoing call.

You are making a call.

R If you have a telephone with tone dialing capability, press the Flash key. You will hear the inhouse dial tone from the earpiece.

Dial up the desired inhouse extension or external subscriber. You will hear the ringing tone from the earpiece, indicating that the desired party is being called. The called picks up the handset.

While making an enquiry call, you wish to admit the called party to the previous call.

R If you have a telephone with tone dialing capability, press the Flash key.

*3 Dial *3.

Hold your telephone conference.

13 Central Abbreviated Dialing

a/b-ISDN

The central abbreviated dialing feature (a pool of 100 abbreviated dialing destinations shared by all terminals) automatically claims an unused ISDN exchange line and dials a prestored number when the user enters a destination code. For instructions on how to store abbreviated dialing codes and pertinent subscriber numbers please refer to the chapter "Setup", page 57.

[↑]	Pick up the handset. You will hear the inhouse dial tone.
[*] [#]	Dial [*] [#].
or	or
[#] [*]	Dial [#] [*].
[0] [0] ... [9] [9]	Select an abbreviated dialing destination (00...99)
	The unit dials up the desired subscriber now.

14 Call Waiting

a/b-ISDN

When a second call comes in while you have an external subscriber on the line, this is indicated by terminal-specific means, such as a visual indicator or a call waiting tone from the earpiece. Conventional analog two-wire telephone sets do not support call waiting with inhouse calls! When you are using ISDN terminals, refer to the respective chapter of the instruction manual supplied with each product. When you are using an analog two-wire telephone set, waiting calls will be discarded after approx. 30 seconds when the call waiting signal is ignored. With analog telephone sets, you can select the Don't Disturb feature to disable call waiting.

14.1 Activating the Don't Disturb Feature

a/b

[↑]	Pick up the handset. You will hear the inhouse dial tone.
	Dial the following to select the Don't Disturb feature:
[*] [5] [1]	To deactivate the Don't Disturb feature, dial: [*] [5] [1].

or	or
# 5 1	To activate the Don't Disturb feature, dial: # 5 1.
	You will hear the acknowledgement signal for approx. 1 second, followed by the inhouse dial tone.
	Hang up.

14.2 Picking Up a Waiting Call (enquiry call) a/b

If you wish to talk to the waiting subscriber, dial * 4. You will be connected with the waiting caller, while the first party is put on hold.

	During an ongoing a call you hear the call waiting signal from the earpiece. You wish to welcome the waiting caller.
R	If you have a telephone with tone dialing capability, press the Flash key.
* 4	Dial * 4.
	You are now connected with the waiting subscriber, while the first caller is being put on hold (see "Enquiry Call" for reference). For additional instructions, please refer to the sections "Broker's Call" or "Three-Party Conference".

14.3 Accepting a Waiting Call a/b

	During an ongoing call, you hear the call waiting signal from the earpiece.
	Hang up (terminating the first call).
	Your telephone is ringing.
	Pick up the handset. You are now connected with the waiting subscriber.

15 Managing Call Distribution

a/b-ISDN

The PABX system manages two internal call distribution lists, referred to as Day and Night. Please note that the naming Day/Night is traditional usage in the field of PABX engineering and does not necessarily refer to a particular time of day. The names Day and Night are only used to point out that the system supports two different call distribution configurations. Call distribution lists are service-sensitive, that is, any terminal on a list will only ring if its service setting matches the service identifier sent with the incoming call. If an external subscriber number is on a call distribution list, the charge units incurred by redirecting a call to that number are charged to the account of an inhouse extension. Allocating terminals or external subscriber numbers to the Day or Night call distribution lists is done in the setup. A call distribution list supports up to six terminals or external subscriber numbers. The Day or Night call distribution lists can only be toggled but never be used at the same time. Terminals that have not exchange line authorization can be included in a call distribution list but will not ring.

The call distribution lists can either be selected by an authorized user in possession of the password or by an authorized extension.

You can switch between the two call distribution lists to direct an incoming call to the terminals of your choice.

15.1 Call Distribution List - Point-to-Multipoint

a/b-ISDN

A call distribution list contains the telephone sets you wish to ring when an incoming call is received. In order for incoming calls to make all terminals on a call distribution list ring, an MSN must be allocated to that call distribution list. Notwithstanding, each terminal may have an MSN allocation of its own.

15.2 Call Distribution List - Point-to-Point

a/b-ISDN

A call distribution list contains the telephone sets you wish to ring when an incoming call is received. Calls are distributed using the call distribution list if an external subscriber dials a direct dial-in suffix that doesn't address any inhouse extension, for example "0" (factory setting).

15.3 Password-Protected Call Distribution Management

a/b-ISDN

Any person in possession of the password may select a call distribution list.

	Pick up the handset. You will hear the inhouse dial tone.
✱ ✱	Press the ✱ key twice.
	You will hear the acknowledgement signal (approx. one second).
0 0 0 0	Enter the four-digit password, for example 0000 (factory setting).
	You will hear the acknowledgement signal.
4 0 1	**To select the Day call distribution list** , dial 4 0 1.
or	or
4 0 2	**To select the Night call distribution list** , dial 4 0 2.
	You will hear the acknowledgement signal.
	Hang up.

15.4 Selection of Call Distribution Lists through Authorized Parties

a/b-ISDN

Any authorized extension may select a distribution list.

	Pick up the handset. You will hear the inhouse dial tone.
✱ 6 4	**To select the Day call distribution list**, dial ✱ 6 4
or	or
# 6 4	**To select the Night call distribution list**, dial # 6 4.
	You will hear the acknowledgement signal.
	Hang up.

16 Call Rerouting

a/b-ISDN

Call rerouting is a standard feature built into your PABX system. You won't have to order that service feature from your network operator.

It gives you the option of rerouting calls from an external party to an external terminal of your choice (occupying both B-channels), from an inhouse terminal to an external terminal, or from an inhouse terminal to another inhouse terminal. Calls rerouted to an external destination will be charged to the owner of the PABX system, while the initial incoming call will be charged to the caller himself. The PABX system cannot process any further incoming call on either dual-line ISDN access while configured to reroute incoming calls to an external destination.

There are three call rerouting options, one of which can be active at a time:

- Immediate Call Rerouting: Calls will be rerouted immediately upon reception. The terminal addressed originally will not ring.
- Delayed Call Rerouting: A call will make the called terminal ring for approx. 15 seconds before being rerouted to the selected destination terminal. The terminal addressed originally will stop ringing.
- Call Rerouting on Busy: If the desired party is busy, the call will be rerouted to the selected destination terminal.

Avoid delays of more than 10 seconds between digits. You should preferably terminate your entry with the # key. The acknowledgement signal indicates that your entry has been accepted and stored. If you don't press the # key you will hear the acknowledgement signal approx. 10 seconds after entering the last digit, provided your entries were correct. This signal indicates that your entries have been stored. If you hang up before hearing the acknowledgement signal, the procedure will be cancelled without storing.

Note: Some ISDN telephone sets have a dedicated function key for the call rerouting feature.

16.1 Immediate Call Rerouting

a/b-ISDN

Calls will be rerouted immediately upon reception. The terminal addressed originally will not ring.

Pick up the handset. You will hear the inhouse dial tone.

✱ 6 1 Dial ✱ 6 1.

Dial the inhouse extension number (00...99) (destination).

or

To select external call rerouting dial ✱ 0, followed by the external subscriber number.

Note: If you dial ✱ 8 1 or ✱ 8 2 (ISDN exchange line #1 or #2) instead of ✱ 0, the unit will use the first or second ISDN exchange line when rerouting calls to an external destination.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

Hang up.

16.2 Delayed Call Rerouting

a/b-ISDN

A call will make the called terminal ring for approx. 15 seconds before being rerouted to the selected destination terminal. The terminal addressed originally will stop ringing.

Pick up the handset. You will hear the inhouse dial tone.

✱ 6 2 Dial ✱ 6 2.

Dial the inhouse extension number (00...99) (destination).

or

To select external call rerouting, enter 0 or ✱ 0, followed by the external subscriber number.

Note: If you dial ✱ 8 1 or ✱ 8 2 (ISDN exchange line #1 or #2) instead of ✱ 0, the unit will use the first or second ISDN exchange line when rerouting calls to an external destination.

#	Terminate your entry.
	You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.
	Hang up.

16.3 Call Rerouting On Busy

a/b-ISDN

If the desired party is busy, the call will be rerouted to the subscriber selected as the destination.

	Pick up the handset. You will hear the inhouse dial tone.
✱ 6 3	Dial ✱ 6 3.
	Dial the inhouse extension number (00...99) (destination).

or

	To select external call rerouting, enter ✱ 0, followed by the subscriber number.

Note: If you dial ✱ 8 1 or ✱ 8 2 (ISDN exchange line #1 or #2) instead of ✱ 0, the unit will use the first or second ISDN exchange line when rerouting calls to an external destination.

#	Terminate your entry.
	You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.
	Hang up.

16.4 Cancelling Call Rerouting

a/b-ISDN

Call rerouting activity is indicated by the special dial tone. Call rerouting (immediate, delayed, on busy) can be cancelled on the initiating terminal using a special procedure.

Pick up the handset. You will hear the special dial tone.

#61

#62

or

#63

To cancel call rerouting (immediate, delayed, on busy):
Dial **#61**, **#62** or **#63**.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

17 Project Numbers

a/b-ISDN

A project is created by entering an ID code and subsequent project number of 6 digits maximum length. A project stores the connection data and charge information tagged with the project number for output on a printer or PC. When a connection has been established you can invoke the project number entry mode to create a complete data record (without connection data and charge information) that can be output to a printer or PC.

17.1 Allocating a Project Number to an Outbound Call

a/b-ISDN

Pick up the handset. You will hear the inhouse dial tone.

***50**

Dial ***50**.

Dial the project number (6 digits max.).

#

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

0 or ✱ 0	If you wish to make your call via any available ISDN line, dial 0 or ✱0.
	Dial the external subscriber number.
	Make your call.

Note:You can also use this feature from within an external enquiry call.

17.2 Allocating a Project Number to an Incoming Call Received by an ISDN Terminal

ISDN

You can use this feature if your ISDN terminal supports in-call dialing.

	Your telephone is ringing.
	Pick up the handset.
	You are making a call. You wish to charge the call to a project.
✱ 5 0	Dial ✱50.
	Dial the project number (6 digits max.).
#	Terminate your entry.
	You will hear the acknowledgement signal for approx. one second.
	Continue with your call.

17.3 Allocating a Project Number to an Incoming Call Received by an Analog Terminal

a/b

	Your telephone is ringing.
	Pick up the handset.
	You are making a call. You wish to charge the call to a project.
R	Press the Signaling key. You will hear the inhouse dial tone from the earpiece.

✱ 5 0	Dial ✱ 5 0.
	Dial the project number (6 digits max.).
#	Terminate your entry.
	You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.
R	Press the Signaling key. Your project number has been stored now and you can get back to the calling party.
	Continue with your call.

18 Service-Specific Call Forwarding through the Office Exchange

a/b-ISDN

Call forwarding is a service feature implemented in the office exchange system of your network operator. When you order this feature from your network operator, the PABX system will allow you to use it. For more detailed information, please contact your network operator. Forwarding to the external destination is service-specific and occurs either immediatey, delayed or on busy, using the subscriber number you have entered in the setup for the desired service.

When call forwarding is requested from the office exchange, it may take as much as one minute for the acknowledgement signal to be returned after you've issued the call forwarding request. Please do not hang up during this time.

18.1 Call Forwarding - Point-to-Multipoint

Calls addressed to any of your MSNs will be forwarded to the selected destination (setup) by the office exchange. Calls are only forwarded when both B-channels of an ISDN access are busy.

18.2 Call Forwarding - Point-to-Point

With a point-to-point access, all incoming calls are forwarded "by service" (see Setup).

19 Call Answering Machine

a/b-ISDN

19.1 Picking Up a Call from an Answering Machine

You can pick up a call on your telephone set while an inhouse party or external subscriber is already leaving his or her message on the call answering machine. Any call that is still ringing at the call answering machine (the machine hasn't turned on yet), can be accepted using the "Call Pickup" ✱4 feature.

	Pick up the handset. You will hear the inhouse dial tone.
✱70	Dial ✱70.
	You can make the call on your telephone set.

20 Door Intercom

a/b-ISDN

The door intercom line is interfaced via the door intercom add-on assembly. When a visitor presses the bell pushbutton at the front door intercom, all terminals on the door intercom call distribution list #1 or #2 will ring. The door intercom feature can only be accessed by terminals which have the door intercom authorization (please refer to Programming).

If an external subscriber number is listed on the door intercom call distribution list, the doorbell call is forwarded to that external subscriber when a visitor rings the doorbell. The charge units incurred by this forwarded call are charged to the internal door intercom extension number.

	You hear the doorbell call on your telephone set.
	Pick up the handset.

	You can now welcome the visitor at the door intercom.
	You wish to open the door.
R	If you have a telephone with tone dialing capability, press the Flash key.
✱ 9	Dial ✱ 9 to actuate the door opener for approx. three seconds. You will hear the acknowledgement signal for one second.
	Continue with your call.
	To terminate the call to the door intercom, hang up.

Note: If you hear the doorbell while using another telephone set, you can dial the door intercom extension number and accept the doorbell call if you are suffiently authorized.

You can also actuate the door opener on any inhouse telephone set by dialing ✱ 9, without having to call the door intercom. This feature is supported by ISDN telephone sets that do not support in-call tone dialing. Terminate the doorbell call and hang up. Pick up the handset again and dial ✱ 9.

20.1 Door Intercom - Call Distribution Management through Authorized Parties

a/b-ISDN

	Pick up the handset. You will hear the inhouse dial tone.
✱ 6 5	To select door intercom call distribution list # 1, dial ✱ 6 5.
# 6 5	To select door intercom call distribution list # 2, dial # 6 5.
	You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.
	Hang up.

20.2 Door Intercom - Password-Protected Call Distribution Management

a/b-ISDN

Any inhouse party in possession of the password may select a list.

	Pick up the handset. You will hear the inhouse dial tone.
✱ ✱	Press the ✱ key twice.
	You will hear the acknowledgement signal for approx. one second.
0 0 0 0	Enter the four-digit password, for example 0000 (factory setting).
	You will hear the acknowledgement signal.
5 0 1	To select door intercom call distribution list # 1, dial 5 0 1.
or	or
5 0 2	To select door intercom call distribution list # 2, dial 5 0 2.
	You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.
	Hang up.

21 Terminal Portability

ISDN

Terminal portability is only supported on the same bus (inhouse ISDN bus port). You wish to move during an ongoing call and resume the call elsewhere in your building. You can activate the portability feature on your terminal, disconnect it from the inhouse ISDN bus and carry it to the desired location. If you reconnect your terminal to the inhouse ISDN bus and disable the terminal portability feature within three minutes, you can resume the call. For more detail on operating procedures, please refer to the instruction manual of your ISDN set.

22 Multiservice Port

a/b

Please note that terminal equipment attached to this port will always ring when being called, regardless of the service identifier.

If an analog port of the PABX system is configured as a ”multiservice port", all incoming calls with the a ”Analog Telephony”, ”ISDN Telephony” or ”Group 3 telefax" service identifier will make the attached terminal ring. When an ISDN line is accessed using an excange line acess code, various service identifiers can be sent accross the ISDN network, independent of the setup of that analog port. When an ISDN line is accessed using the ✱0 exchange line aqcuisition digit, the service identifier ”Analog Telephony” is included in the signal.

Example: You can’t get through to a Group 3 telefax machine (with exactly the same service identifier) attached to a remote ISDN PABX system. Dial ✱83 to make your PABX system include the ”Group 3 telefax” service identifier into the signal. The remote ISDN PABX system will identify the type of service and direct the call to the desired telefax machine.

	You wish to establish an outbound connection with a particular service.
✱83	You wish to send a telefax and include the ”Group 3 telefax” service identifier. Dial ✱83.
or	or
✱84	You wish to include the ”Analog Telephony” service identifier. Dial ✱84.
or	or
✱85	You wish to include the ”ISDN telephony” service identifier. Dial ✱85
	Enter the external subscriber number.
	The desired party is being called.

23 Messaging Inputs

To be implemented in a future release.

24 Connection Charges

a/b-ISDN

You can obtain call charge readouts on any ISDN terminal or two dedicated analog terminals attached to your system.

Your PABX system provides storage capacity for a maximum of 200 connection records. You can send this data to a printer to obtain a hardcopy printout or save them to disk on a desktop or laptop personal computer. You can set up your PABX system to log calls for selected terminals only, or for all terminals attached to your system.

24.1 ISDN Terminals

You can obtain call charge readouts on any ISDN terminal that supports this function.

24.2 Analog Terminals

This feature supports the display of connnection charges on any ISDN terminal equipped with this feature. Additionally, your PABX system gives you the option of displaying charges on the analog terminals attached to the analog ports a/b1 and a/b2, provided they support this feature. Please note that online call charge metering is a special service feature that will have to be ordered separately from your network operator. No system setup is required, the two analog ports can be preset accordingly using the jumpers "J1" and "J2" (during installation). When shipped from the factory, charge metering is enabled.

Please note that charge metering is the sole responsibility of the network operator. Since ISDN uses special techniques to transfer call charge information, connection data may also be sent after the connection has been terminated. The large variety of commercially available analog terminals makes it impossible to guarantuee that the data sent by your PABX system subsequent to the termination of a connection will be received properly by your terminal.

24.3 Printers and Personal Computers

If the printer, desktop or laptop PC is turned off when you output charge data from the PABX system to the unit, or if the printer runs out of paper, the data will not be discarded or lost. You can set up your system to resume outputting the charge data (see Page 114 for detail).

Figure 1 illustrates a data record as output on a printer attached to the system (only the boldface text will be printed) or transferred to a desktop or laptop PC.

Legend for Figure 1:

Type of connection	G = self-initiated outbound call G1: via ISDN line # 1 G2: via ISDN line # 2
	K = You have received a call (no charge units displayed). K1: via ISDN line # 1 K2: via ISDN line # 2
Type of call	AVB = External connection RVB = Enquiry call UUG = Transferred call UBA = Call transferred without prior notice GW- = Change of set
	WA- = Reverted call RUL = Rerouted call RUX = Incoming call rerouted to external destination UB = Undefined
Project number	No charge units displayed with incoming calls.

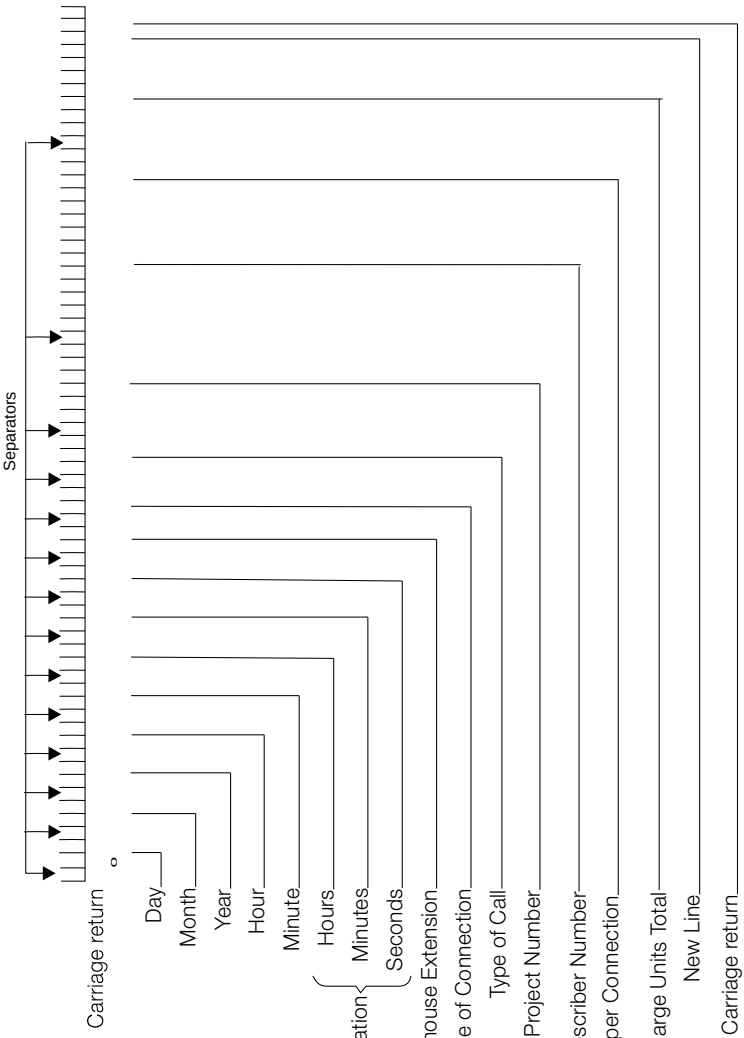
Separators
Carriage return
Day
Month
Year
Hour
Minute
Hours
Minutes
Seconds
Duration
Inhouse Extension
Type of Connection
Type of Call
Project Number
Subscriber Number
Charge Units per Connection
Charge Units Total
New Line
Carriage return

Figure 1:

25 Accessing Special Services via the Keypad

a/b-ISDN

You can only use special keypad features (for example to activate call forwarding through the office exchange) if they are supported by the local exchange system installed by your network operator. If in doubt, please consult the customer service department of your network operator and ask for instructions on using the keypad. Also, your inhouse PABX system must be set up accordingly to give inhouse parties access to special keypad features. Special services are unavailable if the terminal attachment port is set up to acquire an ISDN exchange line automatically, so you may have to disable that function beforehand. In order for a terminal to access special services via the keypad, you must allocate an MSN that is authorized to use those services.

25.1 Initiating Special Services via the Keypad

Pick up the handset. You will hear the inhouse dial tone.

Dial 0 or ✱0.

You will hear the office dial tone.

You have fully transparent access to the office exchange system now. Any digits or characters you dial will be sent directly to the office exchange to initiate a special service offered by your network operator.

✱ or # Dial ✱ or #, as specified by your network operator.

Dial the necessary digits.

Depending on the service configuration used by your network operator, you will receive an acknowledgement signal or an error message from the office exchange. This may either be a signal tone (analog and ISDN terminals) or a signal tone and a text message appearing in the display window of your ISDN telephone set.

Hang up.

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26 Basic Setup

a/b-ISDN

The setup can be performed by any party who is in possession of the password, using any telephone set attached to the unit. When entering the ID codes given in the following, avoid idle intervals of more than 10 seconds between any two digits, else your entry will be automatically cancelled.

Caution! If the system returns an error signal, you will have to start over with the setup.

	Pick up the handset. You will hear the inhouse dial tone.
* *	Press the * key twice.
	You will hear the acknowledgement signal.
0 0 0 0	Enter the four-digit password, for example 0000 (shipping configuration).
	You will hear the acknowledgement signal.
	Dial the ID code for the desired feature.
	Wait for the acknowledgement signal, indicating that the feature has been stored.

Note: You can now proceed to enter all ID codes for the features of your choice. After entering an ID code, wait for the acknowledgement signal, then enter the next ID code.

	Hang up.

Caution!

The setup procedures described in the following require that the "Basic Setup" outlined above has been completed. Please note that all ID codes are "hard-wired" into the system and cannot be changed.

26.1 Recommended Setup Procedure

Table A: Setting up ISDN Network Access Ports

Item	Point-to-Multipoint Access and Point-to-Point Access	Page
1	Set up one or two ISDN network access ports	127
2	Perform basic setup for point-to-multipoint access (shipping configuration)	67
3	*Continue with Table B Item 1*	
4	Perform basic setup for point-to-point access	78
5	*Continue with Table C Item 1*	

Table B: Multiple Subscriber Numbers

Item	Point-to-Multipoint Access	Page
1	Allocate multiple subscriber numbers to terminal equipment	68
2	Set up MSN call distribution	74
3	*Continue with Table C Item 1*	

Table C: Features

Item	Point-to-Multipoint Access and Point-to-Point Access	Page
1	Configure line access authorization for terminals	81
2	Select manual or automatic exchange line acquisition	82
3	Configure call distribution lists	82
4	Enable/disable calling line identification	90
5	Configure line preselection	78
6	Configure abbreviated dialing	108

Item	Point-to-Multipoint Access and Point-to-Point Access	Page
7	Door intercom	103
8	Music on hold	109
9	Date and time	110
10	Call statistics/connection charges	111
11	Change the password	60
12	Service-specific call forwarding -point-to-multipoint	91
13	Service-specific call forwarding -point-to-point	97

27 Changing the Password

The password permits access to the setup mode or password-protected operations. You must enter the new four-digit password twice (default is 0000).

9 2	**To change the password**: Dial 92.
	Enter the four digits for the new password.
	Reenter the four digits for the new password to confirm.
	You will hear the acknowledgement signal.

Note:
In case you have forgotten your password, you must perform a general hardware reset to restore your PABX system to the shipping configuration.

28 Reset

Resetting restores the PABX system to a well-defined initial state, for example to the shipping configuration (see page 8). You may need this option if you wish to cancel an undesired setup or perform a system setup ”from scratch”.

28.1 Hardware Reset to the Shipping Configuration

Unplug the 230V AC power plug of the PABX system from the wall outlet. Open switch S02. Wait approx. one minute, close switch S02 again, then plug the power cord back in. Your PABX system has now been reset to the shipping configuration (see page 8). You will also need this reset procedure if you have forgotten your password.

28.2 Software Reset to the Shipping Configuration

9 0

- **To restore the PABX system to the shipping configuration**:
  Dial 90.

  The unit will reset now.

28.3 Resetting Selected Extensions

9 1

- To **cancel the features** (call rerouting, callback and ISDN line reservation) stored by your PABX system for a selected **inhouse extension**:
  Dial 91.

Dial the desired inhouse extension number.

You will hear the acknowledgement signal.

28.4 Resetting all Inhouse Extensions

9 1 ✳

- To **cancel the features** (call rerouting, callback and ISDN line reservation) stored by your PABX system for **all inhouse extensions**:
  Dial 91.

You will hear the acknowledgement signal.

29 Exchange Line Acquisition Digits

When shipped from the factory, the unit is preset to acquire an unused ISDN exchange line when the user dials ✱ 0 or 0. The setup gives you the option to choose any exchange line acquisition digit between 0 and 9. This digit is valid for all ISDN network accesss ports.

Caution! Inhouse extension numbers and exchange line acquisition codes may not have the same leading digit. For example, you cannot use inhouse extension numbers with a leading ”9" if an outbound ISDN line is accessed with the exchange line acquisition digit ”9".

29.1 Deleting a Custom Exchange Line Acquisition Digit

0 0 • **To delete the exchange line acquisition digit**: Dial 00.

✱ Terminate your entry.

You will hear the acknowledgement signal.

To access an outbound ISDN line, you will now have to dial the default ✱ 0.

29.2 Changing the Exchange Line Acquisition Digit

0 0 • **To change the exchange line acquisition digit:** Dial 00.

0 ... 9 Enter a new digit (0...9)

You will hear the acknowledgement signal.

30 Changing Inhouse Extension Numbers

Your PABX system has a built-in set of extension numbers. When shipped from the factory, the unit is preset to use the inhouse extension numbers listed in the table below. You can allocate inhouse extension numbers between 00 and 99 (see page 64), as required for your communications environment. Please avoid duplicate extension numbers. You can select any exchange line acquisition digit between 0 and 9.
When shipped from the factory, the analog ports and inhouse ISDN ports of the unit are preset to use the extension numbers listed in table 1 below. Before you enter a new extension number, you need to delete the existing extension number. When doing so, please note that all existing entries in Day/Night and door intercom call distribution lists and the MSN allocations will be deleted in the process.

30.1 Terminal Extension Numbers (Shipping Configuration)

Table 1 - Default Inhouse Extension Numbers

Inhouse ISDN and analog ports	Default inhouse extension numbers
ISDN port #1	10...19
ISDN port # 2	20...29
ISDN port # 3	30...39
Analog ports	40...47

Caution! Inhouse extension numbers and exchange line acquisition codes cannot have the same leading digit. For example, you will not be able to use inhouse extension numbers with a leading ”9" if the outbound ISDN line is accessed with the exchange line acquisition digit ”9".

We strongly recommend that you enter at least one new terminal extension number, else you will be unable to make calls and set up the unit after exiting from the setup mode. If this happens, your only option is a general hardware reset.

30.2 Deleting Inhouse Extension Numbers (Analog & ISDN)

Deleting an inhouse extension number deletes all entries in the Day/Night and door intercom call distribution lists.

0 1 • **To delete an inhouse extension number**:
Dial 01.

Delete one terminal extension number (00...99).

or or

✳ Delete all terminal extension numbers.

You will hear the acknowledgement signal.

30.3 Changing Extension Numbers for Analog Terminals

0 3 • **To change an inhouse extension number**:
Dial 03.

1 ... 8 Select the port number (see cable terminal numbering in the chapter Installation for reference).

Select a new terminal extension number (00...99).

You will hear the acknowledgement signal.

30.4 Identifying Analog Terminals

0 7 • **To identify the type of analog terminal**:
Dial 07.

1 ... 8 Select the port number (see cable terminal numbering in the chapter Installation for reference).

Select the type of terminal attached to the analog port.

0 **Analog port not in use**

1 **Telephone set**

2 **Call answering machine**

3 **Modem**

4 **Group 3 telefax**

5 **Multifunctional set**

6 **Analog port # 7: music on hold (external audio insertion)**

7 **Analog port # 8: door intercom**

You will hear the acknowledgement signal.

Notes on the setup items **0** ... **7**.

1 ... **5** Dialing method defaults to tone dialing.

0 ... **5**, **7** Change only if there is no feature currently selected for the extension number allocated to this port.

6 Deletes the extension number, disabling the port for terminal attachment.

7 Sets the authorization level to inhouse only, deleting the extension number from the Day/Night and door intercom call distribution lists and disabling the port for terminal attachment.

30.5 Analog Terminal Dialing Method

When shipped from the factory, the analog ports are preset to use tone dialing. Please note that when resetting any port to pulse dialing, this will disable all features that are initiated with the * key.

0 **8** • **To change the dialing method**:
Dial 08.

1 ... **8** Select the port number (see cable terminal numbering in the chapter Installation for reference).

Select the dialing method.

1 **Pulse dialing**

2 **Tone dialing**

You will hear the acknowledgement signal.

30.6 Changing ISDN Terminal Extension Number Allocations

When shipped from the factory, the inhouse ISDN ports are preset to use the extension numbers listed in table 1 on page 63. You can allocate up to 10 extension numbers to each inhouse ISDN bus port. These extension numbers need to be stored as MSNs in the attached ISDN terminals. You can also use these extension numbers as an MSN for several terminals attached to an inhouse ISDN port.

0 2

- **To enter a new ISDN extension number**:
  Dial 02.

1 ...

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

31 ISDN-Specific Settings - Point-to-Multi-point Access

The following sections outline the setup for special features offered by the point-to-multipoint ISDN access. When shipped from the factory, the unit is already configured for point-to-multipoint access operation.

31.1 Basic Setup for Point-to-Multipoint Access Operation

The current version of the on-board software provides the option to set up both or each one of the ISDN network access ports for different access modes (point-to-point or point-to-multipoint).

1 0 #

- **Setting Up ISDN Network Access Ports (Port #1and #2)**:
  Dial **1 0 #**.

You will hear the acknowledgement signal.

The unit will reset now.

- **Setting Up ISDN Network Access Port #1:**

1 0 1 ✳

Point-to-point:
Dial **1 0 1 ✳**.

1 0 1 #

Point-to-multipoint:
Dial **1 0 1 #**.

You will hear the acknowledgement signal.

The unit will reset now.

- **Setting Up ISDN Network Access Port #2**:

1 0 2 ✳

Point-to-point:
Dial **1 0 2 ✳**.

1 0 2 #

Point-to-multipoint:
Dial **1 0 2 #**.

You will hear the acknowledgement signal.
The unit will reset now.

31.2 Allocating Multiple Subscriber Numbers (MSN)

You can allocate up to 8 terminals to each MSN (ISDN or analog terminals). External callers can reach these terminals via the ISDN network access ports of the unit. If an external subscriber dials an MSN, the incoming call will make these terminals ring, provided there is a match of service.
If an MSN is allocated to a call distribution list, incoming calls will make all matching terminals on that list ring.

An MSN entry can be changed at any time without any need for prior deletion.

The network operator will notify you of your multiple subscriber numbers (MSN). As a general rule, you will receive 3 MSNs. Some network operators may provide you with more numbers, up to a maximum of ten. Enter your multiple subscriber numbers and the pertinent terminals (8 max.) or call distribution lists (MSN) in the following table.
Do not forget to fill in the following table, since it is frequently referenced in the following setup instructions.

Tabelle 2

Digit	ISDN Port #1						ISDN Port #2 (if in use)					
	MSN	Terminal/CDL					Terminal/CDL					
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												

31.3 ISDN Network Access Port #1: Allocating MSN Digits

1 4

- **To allocate an MSN digit:**
  Dial 14.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Enter the MSN (16 digits max.).

Terminate your entry.

You will hear the acknowledgement signal.

31.4 ISDN Network Access Port #1: Deleting the MSN Digit Allocation

1 4

- **To delete an MSN digit allocation**:
  Dial 14.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Delete the allocation.

You will hear the acknowledgement signal.

31.5 ISDN Network Access Port #2: Allocating MSN Digits

1 5

- **To allocate an MSN digit**:
  Dial 15.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Enter the MSN (16 digits max.).

Terminate your entry.

You will hear the acknowledgement signal.

31.6 ISDN Network Access Port #2: Deleting the MSN Digit Allocation

1 **5**

- **To delete the MSN digit allocation** :
  Dial 15.

0 ... **9** Dial the desired MSN digit (see table 2 on page 69).

Cancel the allocation.

You will hear the acknowledgement signal.

31.7 ISDN Network Access Port #2: Allocating Terminals to an MSN

You can allocate a maximum of 8 terminals to each MSN.

1 **6**

- **To allocate terminals to an MSN**:
  Dial 16.

0 ... **9** Dial the desired MSN digit (see table 2 on page 69).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

31.8 ISDN Network Access Port #1: Allocation of a Call Distribution List to an MSN

1 **6**

- **To allocate a call distribution list to an MSN:**
  Dial 16.

0 ... **9** Dial the desired MSN digit (see table 2 on page 69).

***** Press the ***** key to confirm your entry.

You will hear the acknowledgement signal.

The allocation of terminals to an MSN has been deleted now.

31.9 ISDN Network Access Port #2: Allocating Terminals to an MSN

You can allocate a maximum of 8 terminals to each MSN.

1 7

- **To allocate terminals to an MSN**: Dial 17.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

31.10 ISDN Network Access Port #2: Allocation of an MSN to a Call Distribution List

1 7

- **To allocate an MSN to a call distribution list**: Dial 17.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Press the * key to confirm your entry.

You will hear the acknowledgement signal.

The allocation of terminals to an MSN has been deleted now.

31.11 ISDN Network Access Port #1: Deleting the Allocation of a Terminal to an MSN

1 8

- **To delete the allocation of a terminal to an MSN**: Dial 18.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

31.12 ISDN Network Access Port #1: Deleting the Allocation of All Terminals to an MSN

1 8 • **To delete the allocation of all terminals to an MSN** : Dial 18.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

✳ Press the ✳ key to confirm your entry.

You will hear the acknowledgement signal.

Note:
When the allocation of all terminals to an MSN has been deleted, the only remaining allocation is the one between the MSN and the call distribution list.

31.13 ISDN Network Access Port #2: Deleting the Allocation of a Terminal to an MSN

1 9 • **To delete the allocation of a terminal to an MSN**: Dial 19.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

31.14 ISDN Network Access Port #2: Deleting the Allocation of all Terminals to an MSN

1 9 • **To delete the allocation of all terminals to an MSN** : Dial 19.

0 ... 9 Dial the desired MSN digit (see table 2 on page 69).

✳ Press the ✳ key to confirm your entry.

You will hear the acknowledgement signal.

Note:
After the allocation of all terminals to an MSN has been deleted, the only remaining allocation is the one between the MSN and the call distribution list.

32 MSN Signaling

When shipped from the factory, your PABX system is not preset to send MSN information to the office exchange. You network operator will bill the connection charges for all terminals to a single MSN, referred to as the ”Default MSN”.

However, your PABX system has the ability to send a selected MSN to the office exchange when establishing an outbound ISDN connection, allowing the network operator to create a detailed record of connection charges for that MSN. However, if terminals do not have an MSN allocation the PABX system will not include the MSN into the signalling information sent to the office exchange.

In Table 3, use the first column to enter the extension numbers of the terminals whose MSN you wish to have sent to the office exchange. In the second and third columns, enter the number allocation of the selected MSN from Table 2 (page 69). Table 3 should now contain the following information:
The PABX system includes the MSN allocated to the inhouse terminals listed below when exchanging signaling information with the office exchange.

Table 3

Inhouse extension number	MSN digit - ISDN network access port #1 0...9	MSN digit - ISDN network access port #2 0...9	Line preselection		
			0	1	2

Inhouse extension number	MSN digit - ISDN network access port #1 0...9	MSN digit - ISDN network access port #2 0...9	Line preselection		
			0	1	2

32.1 MSN Signaling - ISDN Network Access Port #1

3 0

- **To allocate a terminal to ISDN network access port #1:**
  Dial 30.

0 ... 9 Dial the desired MSN digit (see table 3, page 75).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

3 2

- **To delete the allocation of a terminal to ISDN port #1:**
  Dial 32.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

32.2 MSN Signaling - ISDN Network Access Port #2

3 1

- **To allocate a terminal to ISDN access port #2:**
  Dial 31.

0 ... 9 Dial the desired MSN digit (see table 3 on page75).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

3 3

- **To delete the allocation of a terminal to ISDN port #2:**
  Dial 33.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

32.3 Line Preselection

The line preselection setup is based on information contained in table 3 (see page 75). Table 3 determines the usage of line #1, #2 or # 0 (both lines) when a terminal accesses an outbound line.

32.4 Line Preselection for the ISDN Network Access Ports #1 and #2

2 1 • **To identify the type of analog terminal**:
Dial 21.

0 **Line 0. Use any idle ISDN port (ISDN network access port #1 or #2).**

1 **Line 1.** Use ISDN network access port #1.

2 **Line 2.** Use ISDN network access port #2.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

33 Setup for Point-to-Point Access

The current version of the on-board software provides the option to set up both or each one of the ISDN network access ports for different access modes (point-to-point or point-to-multipoint).

1 0 ✳ • **Setting Up ISDN Network Access Ports (Port #1and #2)**:
Dial **1 0 ✳**.

You will hear the acknowledgement signal.

The unit will reset now.

• **Setting Up ISDN Network Access Port #1:**

1 0 1 ✳ Point-to-point:
Dial **1 0 1 ✳**.

1 0 1 # Point-to-multipoint:
Dial 1 0 1 #.

You will hear the acknowledgement signal.

The unit will reset now.

- **Setting Up ISDN Network Access Port #2**:

1 0 2 * Point-to-point:
Dial 1 0 2 *.

1 0 2 # Point-to-multipoint:
Dial 1 0 2 #.

You will hear the acknowledgement signal.

The unit will reset now.

33.1 ISDN Network Access Port #1: Entering the DDI Root Number

1 1

- **To enter the direct dial-in root number**:
Dial 11.

Enter the DDI root number (skip area code and DDI suffixes).

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

33.2 ISDN Network Access Port #1: Deleting the DDI Root Number

1 1 **To delete the direct dial-in root number**:
Dial 11.

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

33.3 ISDN Network Access Port #2: Entering the DDI Root Number

1 2

- **To enter the direct dial-in root number**:
  Dial 12.

Enter the DDI root number (skip area code and direct dial-in suffixes).

#

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

33.4 ISDN Network Access Port #2: Deleting the DDI Root Number

1 2

- **To delete the direct dial-in root number:**
  Dial 12.

#

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

34 Line Access Authorization

The PABX system distinguishes between the following line access authorization levels for the attached terminals:

- Inhouse only. You can make inhouse calls but you are not authorized to call external subscribers.
- Partly authorized. You can make inhouse calls and accept incoming calls.
- Local only. You can make inhouse calls, accept incoming calls and dial up local subscribers.
- National only. You can make inhouse calls, accept incoming calls and dial up national subscribers (prefix 0).
- International authorization. You can make inhouse calls, accept incoming calls and dial up subscribers worldwide.

2 0 • **To set up line access authorization:**
Dial 20.

Select the authorization level.

0 **International:**
Dial 0.

1 **National**:
Dial 2.

2 **Local** :
Dial 2.

3 **Partly authorized**:
Dial 3.

4 **Inhouse only**:
Dial 4.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

34.1 Automatic ISDN Network Access Port Acquisition

This feature enables (and disables) terminals to automatically acquire a preselected ISDN network access port.

2 3

- To enable automatic ISDN port acquisition:
  Dial 23.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

2 2

- **To disable automatic ISDN port acquisition:**
  Dial 22.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35 Managing Call Distribution

35.1 Call Distribution Control -Day/Night and Door Intercom

This authorization enables terminals to select the Day/Night and the door intercom call distribution lists.

2 7

- **To allow terminals to control Day/Night and door intercom call distribution:**
  Dial 27.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

2 6

- **To disallow terminals to control Day/Night and door intercom call distribution :**
  Dial 26.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.2 Selecting Call Distribution List #1 (Day)

This feature enables terminals which are authorized to perform the setup (and users in possession of the password) to select call distribution list #1. The call distribution lists #1 and #2 can only be toggled and never be active at the same time.

4 0 1

- **To select call distribution list #1** :
  Dial 401.

You will hear the acknowledgement signal.

35.3 Selecting Call Distribution List #2 (Night)

This feature enables terminals which are authorized to perform the setup to select call distribution list #2. The call distribution lists #1 and #2 can only be toggled and never be active at the same time.

4 0 2

- **To select call distribution list #2**:
  Dial 402.

You will hear the acknowledgement signal.

35.4 Call Distribution List #1: Entering Service-Specific Terminals

Terminals are included in the call distribution list #1 according to the desired service. The list may contain a maximum of six inhouse terminals.

4 2

- **To include a service-specific inhouse extension in call distribution list #1**:
  Dial 42.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.5 Call Distribution List #1: Entering a Service-Specific External Subscriber Number

You can enter a service-specific subscriber number into the call distribution list, omitting the ISDN network access port acquisition digit. Please note that entering a service-specific external subscriber number in the call distribution list deletes existing extension numbers in the process, and vice versa.

4 2

- **To enter a service-specific external subscriber number into call distribution list #1:**
  Dial 42.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

***** Confirm your entry.

Dial the external subscriber number.

Terminate your entry by pressing the **#** key.

You will hear the acknowledgement signal.

35.6 Call Distribution List #1: Deleting Service-Specific Terminals

The following instructions outline how to delete service-specific terminals from call distribution list #1.

4 1

- **To delete a service-specific inhouse extension fromcall distribution list #1:**
  Dial 41.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 Group 4 telefax (ISDN terminals only).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.7 Call Distribution List #1: Deleting All Service-Specific Terminals or the External Subscriber Number

This action deletes all terminals or the external subscriber number from call distribution list #1, going by service.

4 1

- **To delete service-specific extensions or an external subscriber number from call distribution list #1:**
  Dial 41.

Select the service:

1 Telephony

2 Data communications (ISDN terminals only)

3 Group 2/3 telefax

4 Group 4 telefax (ISDN terminals only).

Terminate your entry by pressing the * key.

You will hear the acknowledgement signal.

35.8 Call Distribution List #1: Allocating Connection Charges

If call distribution list #1 contains an external subscriber number, any incoming calls with a matching service will be automatically rerouted to that number, and the connection charges incurred by this rerouted call are charged to the account of a dedicated inhouse extension. This extension cannot be deleted, it can only be overwritten.

4 3

- **To allocate the connection charges to a selected extension:**
  Dial 43.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.9 Call Distribution List #2: Entering Service-Specific Terminals

A maximum of six inhouse terminals can be included in the call distribution list #2, according to the desired service.

4 5

- **To include a service-specific inhouse extension in call distribution list #2:**
  Dial 45.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.10 Call Distribution List #2: Entering a Service-Specific External Subscriber Number

You can enter a service-specific subscriber number into the call distribution list, omitting the ISDN network access port acquisition digit. Please note that entering a service-specific external subscriber number in the call distribution list deletes existing extension numbers in the process, and vice versa.

4 5

- **To enter a service-specific external subscriber number into call distribution list #2:**
  Dial 45.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

Confirm your entry by pressing the * key.

Dial the external subscriber number.

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

35.11 Call Distribution List #2: Deleting Service-Specific Terminals

The following instructions outline how to delete service-specific terminals from call distribution list #2.

4 4

- **To delete a service-specific inhouse extension from call distribution list #2:**
  Dial 44.

Select the service:

1 Telephony

2 Data communications (ISDN terminals only)

3 Group 2/3 telefax

4 Group 4 telefax (ISDN terminals only).

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

35.12 Call Distribution List #2: Deleting All Service-Specific Terminals or the External Subscriber Number

This action deletes all terminals or the external subscriber number from call distribution list #2, going by service.

4 4

- **To delete service-specific extensions or an external subscriber number from call distribution list #2**: Dial 44.

Select the service:

1 Telephony

2 Data communications (ISDN terminals only)

3 Group 2/3 telefax

4 Group 4 telefax (ISDN terminals only).

Terminate your entry by pressing the * key.

You will hear the acknowledgement signal.

35.13 Call Distribution List #2: Allocating Connection Charges

If call distribution list #2 contains an external subscriber number, any incoming calls with a matching service will be automatically rerouted to that number, and the connection charges incurred by this rerouted call are charged to the account of a dedicated inhouse extension. This extension cannot be deleted,

it can only be overwritten.

4 6

- **To allocate the connection charges to a selected extension:**
  Dial 46.

Select the service:

1 **Telephony**

2 **Data communications (ISDN terminals only)**

3 **Group 2/3 telefax**

4 **Group 4 telefax (ISDN terminals only).**

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

36 Show/Hide Calling Party Number

This feature, also referred to as calling line identification, suppresses or allows the transmission of your number via the ISDN network access port. When suppressed, your subscriber number will be hidden from any external ISDN subscriber you are calling, that is it will not appear on the display of his or her terminal.

2 8

- **To show the calling party number:**
  Dial 28.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

2 9

- **To hide the calling party number:**
  Dial 29.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

37 Show/Hide Your Subscriber Number

This feature lets you select whether you want to have your own subscriber number displayed on the remote terminal of the calling party or not. When you choose to suppress your subscriber number, it will not be sent to the caller and will not appear on the display of his or her telephone set. For example, if you have forwarded your incoming calls to another terminal, the caller will not see any subscriber number.

3 8	**To show your subscriber number (default setting):** Dial 38.
or	or
3 9	**To hide your subscriber number:** Dial 39.
	Dial the desired inhouse extension number (00...99).
	You will hear the acknowledgement signal.

38 Service-Specific Call Forwarding - Point-to-Multipoint Access

Some office exchange systems are able to forward the services printed in gray (for example 20) in addition to the default services.

38.1 Immediate Call Forwarding

a/b-ISDN

Call forwarding occurs without delay upon reception of a call. The terminal addressed originally will not ring.

6 1	**ISDN port #1, immediate call forwarding**: Dial 61.
or	or
6 4	**ISDN port #2, immediate call forwarding**: Dial 64.

Select the service you wish to forward.

0 0 **All services**

0 1 **Telephony (including services 10, 11,12 and 20)**

0 2 **Telefax (including services 11, 20 and 21)**

0 3 **Data communications**

1 0 **Speech**

1 1 **Audio 3k1Hz (including service 20)**

1 2 **Telephony 3k1Hz**

2 0 **Group 2/3 telefax (including service 11)**

2 1 **Group 4 telefax**

0 ... 9 Dial the digit for the group of extensions to be forwarded (see table 2 on page 69) or press the * key to forward all MSNs at that ISDN network access port.

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

Hang up.

38.2 Cancelling Immediate Call Forwarding a/b-ISDN

You can cancel immediate call forwarding in the office exchange for selected services or all services (dial 00 for all services).

6 1 **ISDN port #1, immediate call forwarding**:
Dial 61.

or or

6 4 **ISDN port #2, immediate call forwarding**:
Dial 64.

Select the service you wish to cancel forwarding for:

0 0 **All services**

0 1 **Telephony (including services 10, 11,12 and 20)**

0 2 **Telefax (including services 11, 20 and 21)**

0 3 **Data communications**

1 0 **Speech**

1 1 **Audio 3k1Hz (including service 20)**

1 2 **Telephony 3k1Hz**

2 0 **Group 2/3 telefax (including service 11)**

2 1 **Group 4 telefax**

0 ... 9 Dial the desired MSN digit (see table 2 on page 69) or press the * key to cancel all MSNs at that ISDN network access port.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

38.3 Delayed Call Forwarding

a/b-ISDN

An incoming call will make the called terminal ring for approx. 15 seconds before being forwarded to the selected destination. The terminal addressed originally will stop ringing.

6 2 **ISDN port #1, delayed call forwarding**:
Dial 62.

or or

6 5 **ISDN port #2, delayed call forwarding**:
Dial 65.

Select the service you wish to forward:

0 0 **All services**

0 1 **Telephony (including services 10, 11,12 and 20)**

0 2 **Telefax (including services 11, 20 and 21)**

0 3 **Data communications**

1 0 **Speech**

1 1 **Audio 3k1Hz (including the services 20)**

1 2 **Telephony 3k1Hz**

2 0 **Group 2/3 telefax (including service 11)**

2 1 **Group 4 telefax**

0 ... 9 Dial the desired MSN digit (see table 2 on page 69) or press the * key to forward all MSNs at that ISDN network access port.

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

38.4 Cancelling Delayed Call Forwarding

a/b-ISDN

You can cancel delayed call forwarding in the office exchange for selected services or all services (dial 00 for all services).

6 2 **ISDN port #1, delayed call forwarding**:
Dial 62.

or or

6 5 **ISDN port #2, delayed call forwarding**:
Dial 65.

Select the service to be cancelled:

0 0 **All services**

0 1 **Telephony (including services 10, 11,12 and 20)**

0 2 **Telefax (including services 11, 20 and 21)**

0 3 **Data communications**

1 0 **Speech**

1 1 **Audio 3k1Hz (including service 20)**

1 2 **Telephony 3k1Hz**

2 0 **Group 2/3 telefax (including service 11)**

2 1 **Group 4 telefax**

0 ... 9 Dial the desired MSN digit (see table 2 on page 69) or press the * key to cancel all MSNs at that ISDN network access port.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

38.5 Call Forwarding on Busy

a/b-ISDN

When the point-to-multipoint access is busy, calls will be immediately forwarded to the selected destination.

6 3 **ISDN port #1, call forwarding on busy**:
Dial 63.

or or

6 6 **ISDN port #2, call forwarding on busy**:
Dial 66.

Select the service you wish to forward

0 0 **All services**

0 1 **Telephony (including services 10, 11,12 and 20)**

0 2 **Telefax (including services 11, 20 and 21)**

0 3 **Data communications**

1 0 **Speech**

1 1 **Audio 3k1Hz (including service 20)**

1 2 **Telephony 3k1Hz**

2 0 **Telefax Gruppe 2/3 (including service 11)**

2 1 **Group 4 telefax**

0 ... 9 Dial the desired MSN digit (see table 2 on page 69) or press the * key to forward all MSNs.

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

38.6 Cancelling Call Forwarding on Busy

a/b-ISDN

You can cancel call forwarding on busy in the office exchange for selected services or all services (dial 00 for all services).

6 3 **ISDN port #1, call forwarding on busy**:
Dial 63.

or or

6 6 **ISDN port #2, call forwarding on busy**:
Dial 66.

Select the service to be cancelled:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and 20)**
- **0 2** **Telefax (including services 11, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service 20)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service 11)**
- **2 1** **Group 4 telefax**

0 ... 9 Dial the desired MSN digit (see table 2 on page 69) or press the * key to cancel all MSNs.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

39 Service-Specific Call Forwarding - Point-to-Point Access

With a point-to-point access all incoming calls are forwarded independent of direct dial-in numbers. Please note that some office exchange systems are able to forward the services printed in italics and gray (for example 20) in addition to the default services.

39.1 Point-to-Point Access: Immediate Call Forwarding

a/b-ISDN

Calls are forwarded immediately upon reception. The terminal addressed originally will not ring.

6 1 **ISDN port #1, immediate call forwarding** :
Dial 61.

or or

6 4 **ISDN port #2, immediate call forwarding**:
Dial 64.

Select the service you wish to forward:

- **0 0 All services**
- **0 1 Telephony (including services 10, 11,12 and** 20**)**
- **0 2 Telefax (including services** 11**, 20 and 21)**
- **0 3 Data communications**
- **1 0 Speech**
- **1 1 Audio 3k1Hz (including service** 20 **)**
- **1 2 Telephony 3k1Hz**
- **2 0 Group 2/3 telefax (including service** 11 **)**
- **2 1 Group 4 telefax**

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

39.2 Cancelling Immediate Call Forwarding a/b-ISDN

You can cancel call immediate forwarding in the office exchange for selected services or all services (dial 00 for all services).

6 1 **ISDN port #1, immediate call forwarding** :
Dial 61.

or or

6 4 **ISDN port #2, immediate call forwarding**:
Dial 64.

Select the service to be cancelled:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and 20)**
- **0 2** **Telefax (including services 11, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service 20)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service 11)**
- **2 1** **Group 4 telefax**

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

39.3 Delayed Call Forwarding

a/b-ISDN

An incoming call will make the called terminal ring for approx. 15 seconds before being forwarded to the selected destination. The terminal addressed originally will stop ringing.

6 2 **ISDN port #1, delayed call forwarding**:
Dial 62.

or or

6 5 **ISDN port #2, delayed call forwarding:**
Dial 65.

Select the service you wish to forward:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and** 20**)**
- **0 2** **Telefax (including services** 11**, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service** 20 **)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service** 11 **)**
- **2 1** **Group 4 telefax**

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

39.4 Cancelling Delayed Call Forwarding

a/b-ISDN

You can cancel delayed call forwarding in the office exchange for selected services or all services (dial 00 for all services).

6 2 **ISDN port #1, delayed call forwarding**:
Dial 62.

or or

6 5 **ISDN port #2, delayed call forwarding**:
Dial 65.

Select the service to be cancelled:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and 20)**
- **0 2** **Telefax (including services 11, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service 20)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service 11)**
- **2 1** **Group 4 telefax**

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the inhouse dial tone.

Hang up.

39.5 Call Forwarding on Busy

a/b-ISDN

With a point-to-point access, incoming calls are forwarded immediately upon reception.

6 3 **ISDN port #1, call forwarding on busy**:
Dial 63.

or or

6 6 **ISDN port #2, call forwarding on busy**:
Dial 66.

Select the service you wish to forward:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and 20)**
- **0 2** **Telefax (including services 11, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service 20)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service 11)**
- **2 1** **Group 4 telefax**

Enter the external subscriber number.

Terminate your entry.

You will hear the acknowledgement signal for approx. one second, followed by the special dial tone.

39.6 Cancelling Call Forwarding on Busy

a/b-ISDN

You can cancel call forwarding on busy in the office exchange for selected services or all services (dial 00 for all services).

6 3 **ISDN port #1, call forwarding on busy**:
Dial 63.

or or

6 6 **ISDN port #2, call forwarding on busy**:
Dial 66.

Select the service to be cancelled:

- **0 0** **All services**
- **0 1** **Telephony (including services 10, 11,12 and 20)**
- **0 2** **Telefax (including services 11, 20 and 21)**
- **0 3** **Data communications**
- **1 0** **Speech**
- **1 1** **Audio 3k1Hz (including service 20)**
- **1 2** **Telephony 3k1Hz**
- **2 0** **Group 2/3 telefax (including service 11)**
- **2 1** **Group 4 telefax**

Terminate your entry.

You will hear the acknowledgement signal for approx. 1 second, followed by the inhouse dial tone.

40 Door Intercom Authorization

a/b-ISDN

This feature requires that analog port #8 has been configured for door intercom operation and that the equipment has been wired properly. When shipped from the factory, the door intercom feature cannot access an outbound line. Incoming doorbell calls override the inhouse-only limitation while the connection exists.

40.1 Setup for Door Intercom Authorization

The door intercom authorization includes the following features:

- The terminal can connect with the door intercom.
- The terminal can pick up a door intercom call.
- The terminal can actuate the door opener.

2 5

- **To set up the door intercom authorization**:
  Dial 25.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

40.2 Cancelling the Door Intercom Authorization

2 4

- **To cancel the door intercom authorization**:
  Dial 24.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

40.3 Authorizing Terminals to Select the Day/Night and Door Intercom Call Distribution Lists

This feature allows terminals to toggle the door intercom and the Day/Night call distribution lists.

2 7

- **To authorize a terminal to toggle the door intercom and Day/Night call distribution lists:**
  Dial 27.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

2 6

- **To deny access to the door intercom and DayNight call distribution list selection**:
  Dial 26.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

40.4 Selecting Door Intercom Call Distribution List #1 (Day)

This feature enables terminals which are authorized to perform the setup to toggle the door intercom call distribution list. The door intercom call distribution lists #1 and #2 can only be toggled and never be active at the same time.

5 0 1

- **To select door intercom call distribution list #1**:
  Dial 501.

You will hear the acknowledgement signal.

40.5 Selecting Door Intercom Call Distribution List #2 (Night)

This feature enables terminals which are authorized to perform a setup to toggle the door intercom call distribution list. The door intercom call distribution lists #1 and #2 can only be toggled and never be active at the same time.

5 0 2

- **To select door intercom call distribution list #2**:
  Dial 502.

You will hear the acknowledgement signal.

40.6 Door Intercom Call Distribution List #1: Entering Inhouse Terminals

A maximum of 6 inhouse terminals can be entered into door intercom call distribution list #1. The terminals on that list are automatically authorized to receive door intercom calls.

5 2 • **To add inhouse terminals to door intercom call distribution list #1:**
Dial 52.

Dial the inhouse extension number (00...99).

 You will hear the acknowledgement signal.

40.7 Door Intercom Call Distribution List #1: Entering an External Subscriber Number

If an external subscriber number is entered in door intercom call distribution list #1, the door intercom call is rerouted to that external party when a visitor rings the doorbell. The charge units incurred by the rerouted call are charged to the account of the door intercom extension number.

When entering an external subscriber number into the door intercom call distribution list #1, omit the ISDN line acquisition digit. Doing so deletes all extension numbers in that call distribution list.

5 2 • **To enter an external subscriber number into door intercom call distribution list #1:**
Dial 52.

Press the * key.

Dial the external subscriber number.

Terminate your entry by pressing the # key.

 You will hear the acknowledgement signal.

40.8 Door Intercom Call Distribution List #1: Deleting Inhouse Terminals

This procedure deletes a selected entry from the door intercom call distribution list, cancelling the door intercom authorization in the process.

5 1

- **To delete inhouse terminals from door intercom call distribution list #1**:
  Dial 51.

Dial the inhouse extension number (00...99).

You will hear the acknowledgement signal.

40.9 Door Intercom Call Distribution List #1: Deleting All Entries

This procedure deletes all entries from the door intercom call distribution list, cancelling the door intercom authorization in the process.

5 1

- **To delete all entries from door intercom call distribution list #1:**
  Dial 51.

Terminate your entry by pressing the * key.

You will hear the acknowledgement signal.

40.10 Door Intercom Call Distribution List #2: Entering Inhouse Terminals

A maximum of 6 inhouse terminals can be entered into door intercom call distribution list #2. The terminals on that list are automatically authorized to receive door intercom calls.

5 5

- **To add inhouse terminals to door intercom call distribution list #2**:
  Dial 55.

Dial the inhouse extension number (00...99).

You will hear the acknowledgement signal.

40.11 Door Intercom Call Distribution List #2: Entering an External Subscriber Number

If an external subscriber number is entered in door intercom call distribution list #2, the door intercom call is rerouted to that external party when a visitor rings the doorbell. The charge units incurred by the rerouted call are charged to the account of the door intercom extension number.

When entering an external subscriber number into the door intercom call distribution list #2, omit the ISDN line acquisition digit. Doing so deletes all extension numbers in that call distribution list.

5 5

- **To enter an external subscriber number into door intercom call distribution list #2**:
  Dial 55.

Terminate your entry by pressing the * key.

Dial the external subscriber number.

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

40.12 Door Intercom Call Distribution List #2: Deleting Inhouse Terminals

This procedure deletes a selected entry from the door intercom call distribution list, cancelling the door intercom authorization in the process.

5 4

- **To delete inhouse terminals from door intercom call distribution list #2**:
  Dial 54.

Dial the inhouse extension number (00...99).

You will hear the acknowledgement signal.

40.13 Door Intercom Call Distribution List #2: Deleting All Entries

This procedure deletes all entries from the door intercom call distribution list, cancelling the door intercom authorization in the process.

5 4 • **To delete all entries from door intercom call distribution list #2**:
Dial 54.

✳ Terminate your entry by pressing the ✳ key.

You will hear the acknowledgement signal.

41 Central Abbreviated Dialing

When entering subscriber numbers, omit the exchange line acquisition digit.

41.1 Allocating External Subscriber Numbers to Abbreviated Dialing Codes

7 7 • **To allocate an external subscriber number to an abbreviated dialing code**:
Dial 77.

0 0 ... 9 9 Select the abbreviated dialing code.

Enter the external subscriber number.

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

41.2 Deleting an External Subscriber Number

7 7 • **To delete the allocation of an external subscriber number to an abbreviated dialing code** :
Dial 77.

0 0 ... 9 9 Select the abbreviated dialing code.

#	Terminate your entry by pressing the # key.
	You will hear the acknowledgement signal.

41.3 Deleting All External Subscriber Numbers

7 7	• **To delete all subscriber numbers**: Dial 77.
#	Terminate your entry by pressing the # key.
	You will hear the acknowledgement signal.

42 Music on Hold

Your PABX system comes with two built-in tunes and an interface for an external audio source. The setup allows for enabling/disabling the built-in music on hold, provided external music on hold audio insertion is inactive.

9 7 0	**Disables built-in music on hold** (allowing for external audio insertion).
9 7 1	Selects **built-in music on hold, tune #1**.
9 7 2	Selects **built-in music on hold, tune #2**.
	You will hear the acknowledgement signal.

43 Entering Date and Time

When the unit is shipped from the factory or when it is powered down and switch S02 is opened subsequently, the current time is the time of compilation of the system software. This time is overridden by ISDN network time as soon as the unit establishes the very first connection via the office exchange of your network operator.

9 8	**To enter date and time**: Dial 98.
0 1 ... 3 1	Enter the day.
0 1 ... 1 2	Enter the month.
9 6 ...	Enter the year (for example 96).
0 0 ... 2 3	Enter the hour.
0 0 ... 5 9	Enter the minutes.
	You will hear the acknowledgement signal.

The seconds count will start at 00 after the entry has been terminated.

44 Call Statistics, Connection Charges

Call statistics for outbound calls can only be recorded using project numbers.

44.1 Enabling Call Statistics for Individual Terminals

8 1 **To enable call statistics for a selected terminal:**
Dial 81.

Dial the desired extension number (00...99).

You will hear the acknowledgement signal.

44.2 Enabling Call Statistics for All Terminals

8 1 **To enable call statistics for all terminals:**
Dial 82.

Terminate your entry by pressing the * key.

You will hear the acknowledgement signal.

44.3 Disabling Call Statistics for Individual Terminals

8 0 **To disable call statistics for a selected terminal :**
Dial 80.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

44.4 Disabling Call Statistics Outputs via the Serial Interface

8 2 **To disable call statistics output**:
Dial 82.

Terminate your entry by pressing the # key.

You will hear the acknowledgement signal.

44.5 Disabling Call Statistics for All Terminals

8 0 **To disable call statistics for all terminals:**
Dial 80.

✳ Terminate your entry by pressing the ✳ key.

You will hear the acknowledgement signal.

44.6 Enabling Call Statistics Outputs via the Serial Interface

8 2 **To enable call statistics outputs:**
Dial 82.

✳ Terminate your entry by pressing the ✳ key.

You will hear the acknowledgement signal.

44.7 Resetting the Charge Counter for Individual Terminals

8 4 **To reset the charge counter for a selected terminal**:
Dial 84.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

44.8 Resetting the Charge Counter for All Terminals

8 4 **To reset the charge counter for all terminals**:
Dial 84.

✳ Terminate your entry by pressing the ✳ key.

You will hear the acknowledgement signal.

44.9 Outputting the Charge Count for an Individual Terminal to a PC

8 5 **To output the charge count for a selected terminal to a PC**:
Dial 85.

Dial the extension number (00...99) for the desired terminal.

You will hear the acknowledgement signal.

44.10 Outputting the Charge Count for All Terminals to a PC

8 5 **To output the charge count for all terminals to a PC:**
Dial 85.

✳ Terminate your entry by pressing the ✳ key .

You will hear the acknowledgement signal.

44.11 Toggling Keypad Control On and Off

Pick up the handset.
You will hear the inhouse dial tone.

3 7

To enable keypad control:
Dial **3 7**.

or

or

3 6

To disable keypad control:
Dial **3 6**.

Dial the desired inhouse extension number (00...99).

You will hear the acknowledgement signal.

Hang up.

44.12 Repeat Charge Data Printout after Interface Error

When your printer runs out of paper or somebody turns it off inadvertently, you will not receive a complete hardcopy printout of your charge data records. This feature allows you to reprint all 200 charge data records stored in the memory of your PABX system.

8 2 #

- Stops the charge data output via the serial interface.

You will hear the acknowledgement signal.

8 9 ✳

- To reprint all charge data records:
  Dial **8 9 ✳**.

8 2 ✳

- Restart the charge data output via the serial interface.

You will hear the acknowledgement signal.

All charge data records stored in memory will be printed now.

44.13 Selecting a Communications Protocol for Charge Metering

If you know you are able to output charge data to a PC or printer but you do not see any corresponding display on your telephone set, contact your network operator's customer service department and ask for the protocol they use for sending charge information. When you have received the desired information, configure your PABX system accordingly.

8 3 ✳

- To select both protocols ("function-oriented" and "keypad") and use the default setting of your PABX system:
  Dial **8 3 ✳**.

8 3 1

- To select the "keypad" protocol:
  Dial **8 3 1**.

8 3 2

- To select the "function-oriented" protocol:
  Dial **8 3 2**.

You will hear the acknowledgement signal.

45 PC-Based Setup

The setup of your PABX system can also be accomplished using a desktop or laptop PC. The setup software can be found on the 3.5" diskette supplied with the accessory kit. The setup program requires that DOS 3.3 or higher (software for Microsoft Windows to be published soon) is installed on your PC. To install, insert the diskette into the disk drive of your personal computer.

Enter the following:

A: , followed by the Return key

Enter the following:

A:\ > SETUP, followed by the Return key

The setup software will be copied to the directory C:\ELMEGC88 on your hard disk now.

The following prompt appears when the installation has been completed:

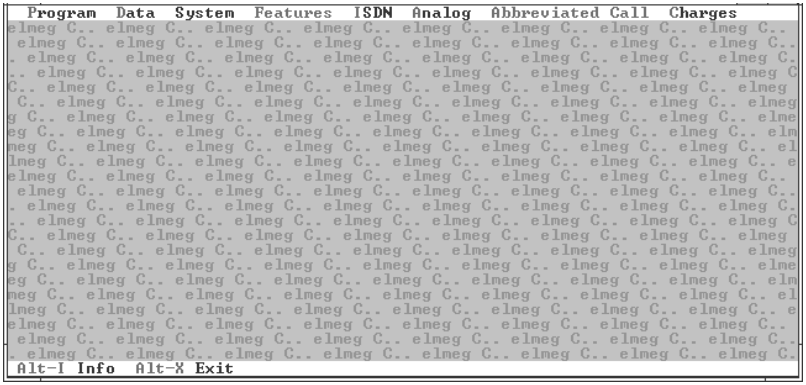
C:\ELMEGC88>

Enter the following:

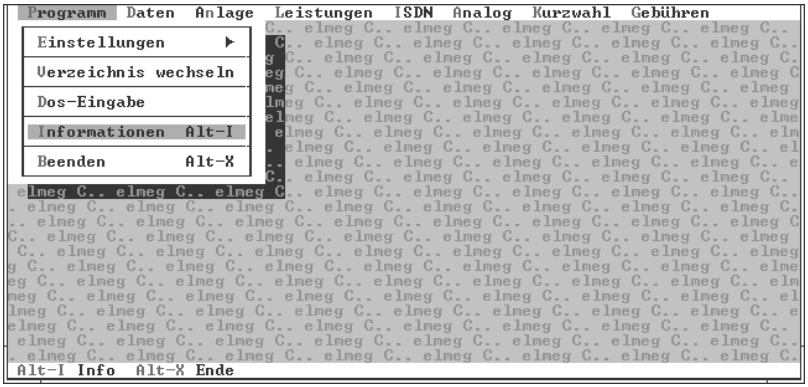
C:\ELMEGC88>**ELMEGC88**, followed by the Return key

The setup software displays the following startup screen.

Move the mouse pointer to the ”OK” button, then click with the left mouse key. The screen should look as shown below now.



Move the mouse pointer to the **Program** menu, then click the left mouse key. The following menu should appear on the screen:



You can now proceed to select the basic settings for the system setup. To continue, follow the instructions given along with the individual menus.

Please note!
When you upload the complete setup data record to the PABX system in one go, the charge data stored in the system will be overwritten. To avoid this undesirable loss of data, we strongly recommend that you upload the data for each individual menu. Should your setup software exhibit erratic performance while communicating with the PABX system after launching from Windows 3.xx or Windows 95, we strongly recommend that you install the software under MS-DOS!

elmeg
Kommunikationstechnik

Installation

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46 Installing Your PABX System

Before tackling the installation, check the contents of the shipping carton against the packing list printed below.

Packing list:

- 1 PABX system
- 1 ISDN connection cord
- 1 PC interface cable, 9-pin to 9-pin
- 1 user manual
- 1 setup software diskette
  (requires MS-DOS Version 3.3 or higher)
- 1 drilling template
- 3 dowels
- 3 screws

46.1 Selecting a Mounting Location

Your PABX system has been designed for operation at ambient temperatures above 0 °C and below +40 °C. To ensure smooth operation, we recommend that you avoid the following locations when installing your PABX system:

- in front of or above sources of excessive heat, for example radiators
- in locations exposed to direct solar radiation
- behind curtains
- in small rooms without sufficient ventilation
- in rooms where humidity is excessive
- on surfaces made of flammable materials or anywhere in the vicinity of such materials
- in the vicinity of equipment employing radio frequencies, such as radio transmitters, radiotherapy systems and other

The PABX system is powered via a 230 V AC utility outlet. To eliminate the risk of electric shock or damage to other equipment, please make sure that the power outlet (preferably a protection-earthed type) serving your PABX system is **freely accessible** and installed by a qualified electrician. We recommend

installing a separate supply circuit providing 230 V AC power to your PABX system. This protects your systemfrom short-circuits that may occur in other inhouse equipment. Also, we recommend using an overvoltage protection device for your PABX system. Overvoltage protection devices (also referred to as surge arrestors) eliminate high voltages caused by atmospheric discharges occuring, for example, during thunderstorms. If you wish to install overvoltage protection, please consult your electrician.

The distance between PABX system and the 230 V AC power outlet and ISDN termination unit shouldn't exceed 1.3 meters. This is the maximum length of the standard power cord.

46.2 Wall-Mounting Your PABX system

- Refrain from installing your PABX system during atmospheric discharges.
- Place the drilling template on the selected mounting location. Make sure that it is perfectly perpendicular.
- Use the drilling template to mark the drill points on the wall.
- Make sure that there is no gap between the back panel contact surfaces and the wall. Check whether there is no concealed power cable or other wiring within reach of the selected drill points.
- Drill the mounting holes where you have applied your marks. (We recommend a 6 mm stone drill when using the dowels for installation.)
- Introduce the dowels into the holes, insert the two upper screws supplied with the unit into the dowels, then screw down until the screws protrude from the wall by approximately 5 millimeters.
- Attach the PABX system to the wall by introducing the screws into the rear-panel mounting holes.
- Insert the third screw at the marked location and tighten it down to secure the PABX system at its mounting location.

46.3 Connecting Cables and Wiring

Before proceeding to connect the PABX system to your network termination (NT) you will have to determine the which type of access you have. If you have a choice between a point-to-multipoint and point-to-point access, you will have

to order the desired configuration now, if you haven't done so anyway. Your network operator will send field personnel to install your network termination accordingly, and you can proceed to set up your PABX system as outlined in the chapter "Setup".

46.4 Removing the PABX System Cover Panels

Unplug the AC power cord before removing the PABX system covers!

To remove the cover panel, hold it by its front edge, press the two locking tabs to the inside and carefully lift the cover until it is unlocked. Once unlocked, you can lift it off easily to access the cable terminal section below.
To replace the protective cover, introduce the two locking tabs (at the back of the cover panel) into the corresponding cutout in the PABX system enclosure. Press down carefully until the protective cover locks into place with a snapping sound.

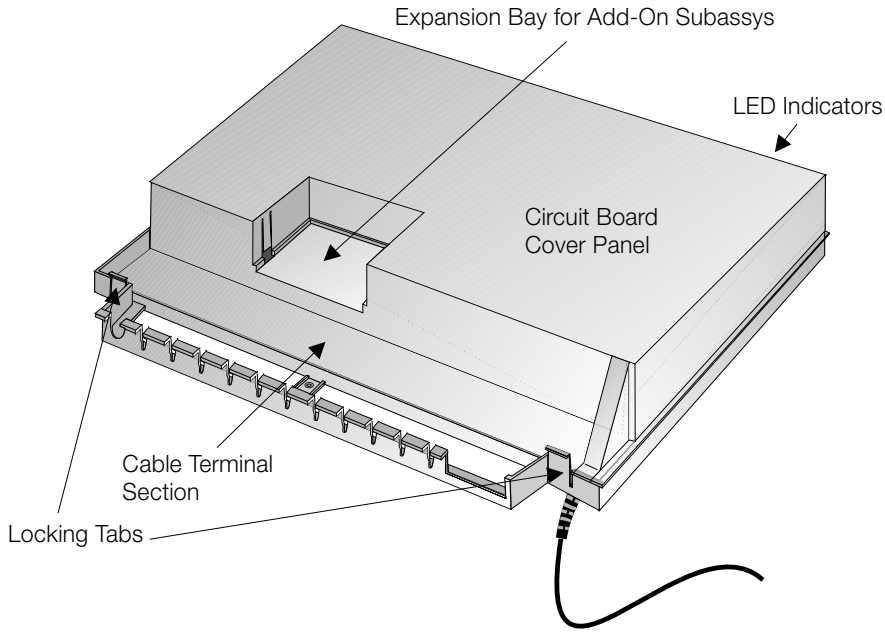

Figure 2: PABX System with Cover Panel Removed

46.5 Cable Terminal Section Overview

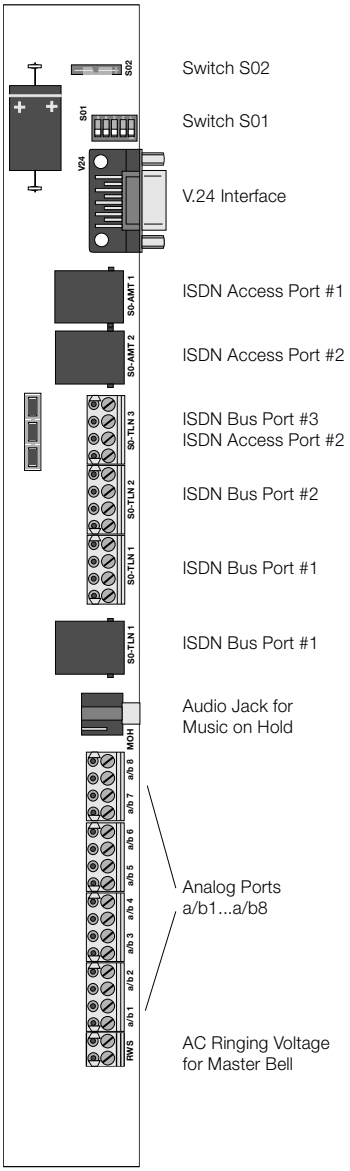

Figure 3: Cable Terminal Section

46.6 Switch S02 and Backup Battery

Switch S02 disconnects the battery from the PABX system. This switch needs to be opened for battery replacement. Please note that battery replacement is reserved to qualified personnel. To avoid a complete loss of setup data, make sure that 230V AC line power remains applied to the unit when replacing the battery. Also, the worn-out battery must be disposed of properly without creating any hazard to the environment.

Caution!
This switch must remain closed during PABX system operation! Opening switch S02 while the PABX system is powered down deletes all setup data stored by the unit, resetting it to the shipping configuration.

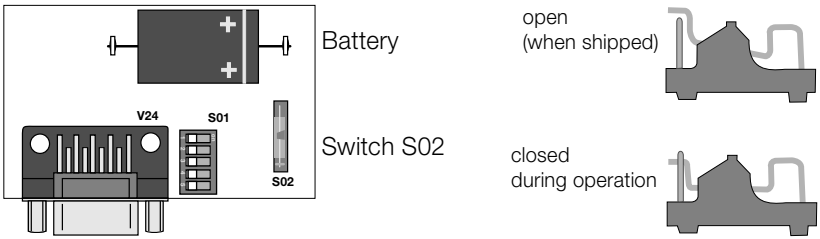

Figure 4: Battery and Switch S02

46.7 Switch S01

DIP switch block S01/1...5 controls the configuration of the inhouse ISDN ports. Switch 1 doesn't influence any operative settings of the PABX system, while the switches 2...4 toggle between the port control software modes "limited-length passive bus" and "point-to-point". Switch 5 toggles analog port #8 between the telephony and door intercom modes. When changing this switch setting, the unit must be powered down for approx.10 seconds. When shipped from the factory, all switches are OFF.

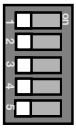

Figure 5: Switch S01

Switch S01	Port/Function	Setting	Configuration
/1	Test only	ON	Reserved for testing
		OFF	Normal operation
/2	ISDN access port #1	ON	Point-to-point
		OFF	Limited-length passive bus
/3	ISDN access port #2	ON	Point-to-point
		OFF	Limited-length passive bus
/4	Inhouse ISDN bus port #3	ON	Point-to-point
		OFF	Limited-length passive bus
/5	Analog port #8	ON	Door intercom
		OFF	Telephone set / door intercom

= Shipping configuration

46.8 V.24 Interface Port

The V.24 interface allows for interfacing your PABX system with a desktop/laptop personal computer or a serial printer. The desktop or laptop PC uses this interface port to read and write PABX system setup data (see chapter Setup for reference).

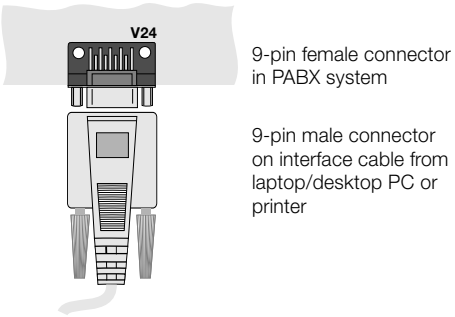

Figure 6: V.24 Interface

Figure 7 illustrates the PC or printer interfacing options offered by your PABX system and the wiring of the 9-pin to 25-pin adaptor cables.

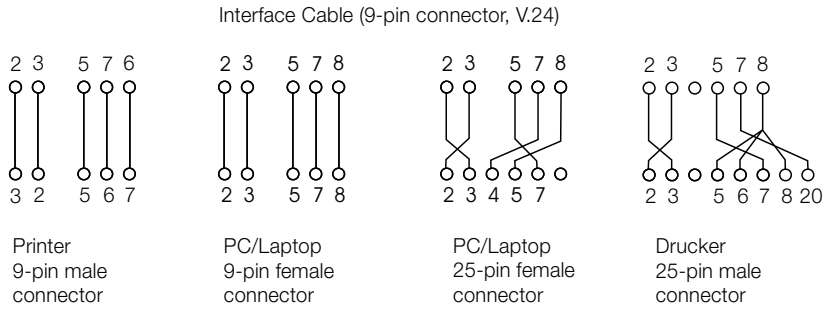
Interface Cable (9-pin connector, V.24)
2 3 5 7 6
3 2 5 6 7
Printer 9-pin male connector
2 3 5 7 8
2 3 5 7 8
PC/Laptop 9-pin female connector
2 3 5 7 8
2 3 4 5 7
PC/Laptop 25-pin female connector
2 3 5 7 8
2 3 5 6 7 8 20
Drucker 25-pin male connector

Figure 7: V.24 Interfacing Options

RS 232 Serial Interface Settings:

9600 Baud
8 data bits
no parity
2 stop bit

46.9 Cable Terminals

The cable terminal blocks are plugged onto pins soldered to the printed circuit board, allowing the user to modify the wiring without having to clip wires. The cable terminal blocks come in the same shipping carton with the PABX system, packed in a separate plastic bag. To unplug a cable terminal block, carefully pry it loose with a small screwdriver, then pull it off the printed circuit board. Be careful not to twist the pins while doing so.

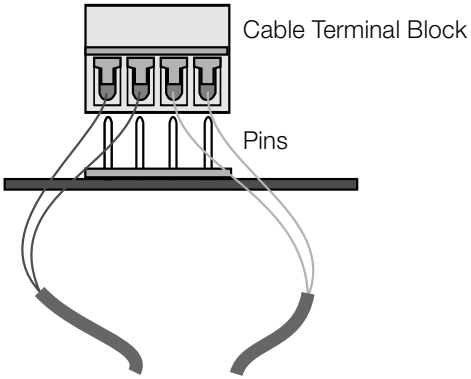

Figure 8: Handling Cable Terminal Blocks

46.10 ISDN network Access Port #1

ISDN network access port #1 is physically implemented as an 8-pin RJ45 female connector, the four center pins of which are wired. Permanent wiring through soldering or screw-type terminals is not supported.

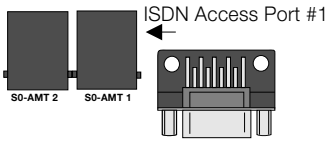

Figure 9: ISDN Network Access Port #1

The RJ45 connectors on the ISDN connection cord are secured in their mating sockets by locking devices. The lever on the locking device points to the printed circuit board when the connector is plugged in properly. To unlock, press down the small lever (Figure 10) at the RJ45 connector and pull the connector out of the socket.

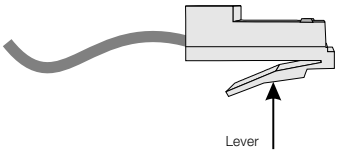

Figure 10: RJ45 Connector

Wiring of the RJ45 jack for ISDN network access port #1. Figure 11 illustrates the pin wiring, as seen from the front.

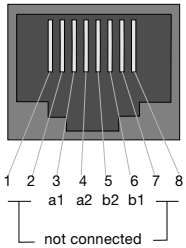

Figure 11: ISDN Jack Pinout

46.11 Combination ISDN Port #3

Combination ISDN port #3 can be optionally used as an inhouse ISDN bus port or as an ISDN network access port. When shipped from the factory, this port is preset to be used as an inhouse ISDN port. Unplugging the ISDN port #3 jumper and modifying the setup accordingly resets the port to serve as an ISDN network access port. The inhouse ISDN bus connects to cable terminal block S0-TLN3, while the ISDN network is connected via the ISDN jack. When shipped from the fatory, the extension numbers 30...39 are allocated to the inhouse ISDN bus.

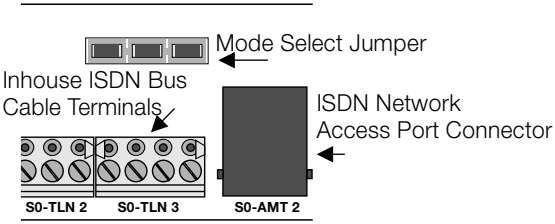

Figure 12: Mode Selection for Port #3 (Inhouse Bus/Network Access)

Figure 13 illustrates the wiring the of ISDN port #3, as seen from above the cable terminal block.

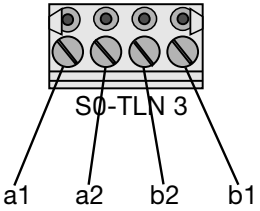

Figure 13: Wiring of ISDN Bus Port #3

46.11.1 Inhouse ISDN Bus Port #2

Figure 14 illustrates the wiring of the inhouse ISDN bus port #2. This port is hard-wired to screw-type cable terminals. When shipped from the factory, the extension numbers 20...29 are allocated to this port.

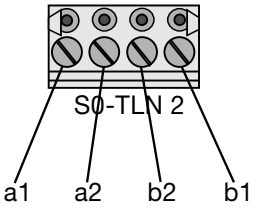

Figure 14: Wiring of Inhouse ISDN Bus Port #2

46.11.2 Inhouse ISDN Bus Port #1

Figure 15 illustrates the wiring of inhouse ISDN bus port #1. This port connects to an ISDN wall jack (see Figure 16) is hard-wired to screw-type cable terminals (see Figure 17). When shipped from the factory, the extension numbers 10...19 are allocated to this port.

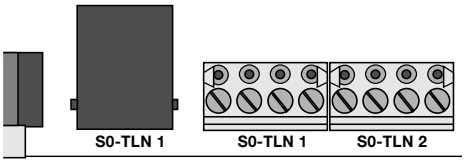

Figure 15: ISDN Network Access Port #1

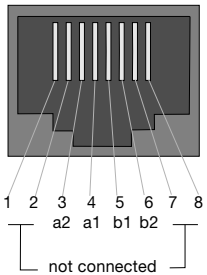

Figure 16: Wiring of On-Board RJ45 Connector #1

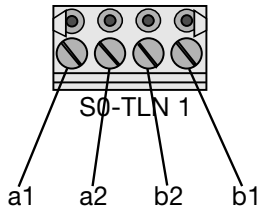

Figure 17: Wiring of ISDN Bus Port #1

46.11.3 Music on Hold Audio Insertion

External audio can be inserted into the PABX system via a stereo jack to serve as music on hold. The 3.5 mm banana plug (not supplied) can be obtained from a specialized dealer.

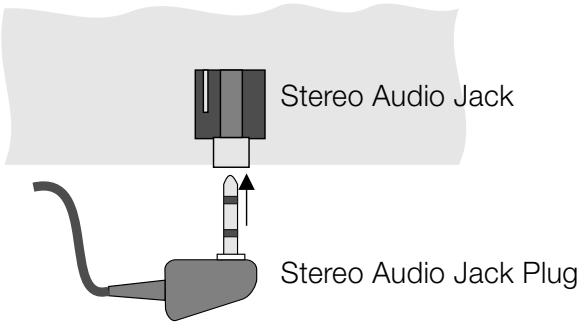

Figure 18: Audio Jack for Music on Hold Insertion

Music on hold interfacing specs:

Signal level:	+10 dBm max.
Input impedance	5000 Ohm
Isolation from PABX circuitry	capacitors
Max. input voltage	1.7V_{RMS}, 2.4$V_{peak\ sine\text{-}wave}$

46.11.4 AC Ringing Voltage

The AC ringing voltage is used for a master bell (not supplied) connected to the PABX system. The door intercom subassembly is equipped with a relay interface that feeds the AC ringing voltage to the external master bell unit.

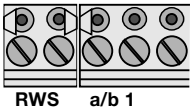

Figure 19: Ringing Voltage Supply Terminals

46.11.5 Analog Ports

Figure 20 illustrates the screw-type cable terminals for the attachment of analog terminal equipment.

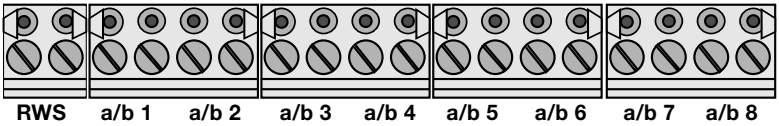

Figure 20: Terminals a/b 1...a/b 8 for Analog Terminal Equipment

46.12 ISDN Network Access Options Offered by Your PABX System

The following figures illustrate the three different physical network access options offered by your PABX system. While the physical attachment of two ISDN network access ports may differ, it is prohibited to operate the one ISDN access port as a point-to-point access and the other as a point-to-multipoint access.

- Figure 21 illustrates the direct connection to the network termination device (NT) using the ISDN connection cord supplied with the unit. This cabling option is supported both by the point-to-point and point-to-multipoint access.

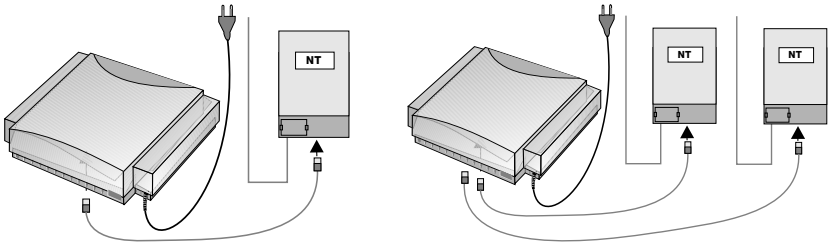

Figure 21: Single ISDN Port *Two ISDN Ports*

- Figure 22 illustrates the connection to an ISDN wall-jack in series with the NT device. This cabling option is supported both by the point-to-point and point-to-multipoint access.

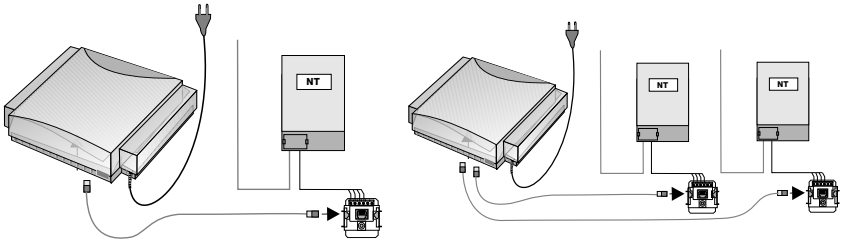

Figure 22: Single ISDN Port *Two ISDN Ports*

- Figure 23 illustrates the connection to an ISDN wall jack in a point-to-multipoint bus structure. This cabling option is only supported by the point-to-multipoint access. The PABX system must be connected to the very last ISDN wall jack on the bus and the 100 Ohm terminating resistors must be removed from this wall jack (see illustration) in order for the installation to work properly.

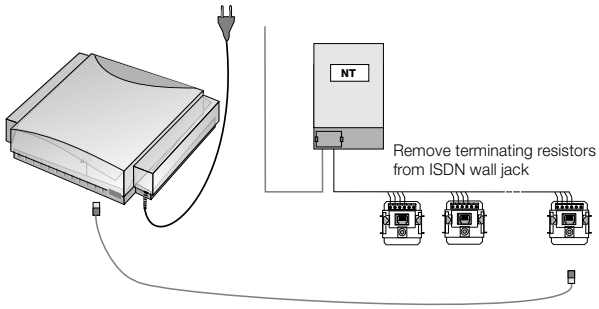

Figure 23: Bus Attachment

46.13 Connecting the Inhouse ISDN Bus

The three inhouse ISDN bus ports support three optional configurations, referred to as “limited-length passive bus”, “extended-length passive bus” and “point-to-point”. When shipped from the factory, the inhouse ISDN bus ports #1...#3 are preset for the “limited-length passive bus” mode (see page 127).

46.13.1 “Limited-Length Passive Bus”

The limited-length passive bus has a reach of 150 m (gauge wire 0,4 mm) and a maximum reach of 200 m (gauge wire 0,6 mm) and supports up to 12 ISDN wall jacks in series. You may connect up to 8 terminals, four of which can be powered by the inhouse bus and four of which need to be powered by a dedicated power source (or a built-in power supply). Two ISDN terminals may be used at the same time (for example, two telephone sets can maintain inhouse or outbound connections via the inhouse bus). The following extension numbers are available: 10...19 for ISDN bus port #1 (Bus #1), 20...29 for inhouse ISDN bus port #2 (Bus #2) and 30...39 for ISDN bus port #3 (Bus #3). These numbers can be allocated to any desired terminal using the setup. The 100 Ohm terminating resistors need to be activated in the last ISDN wall jack on the bus (Figure 24).

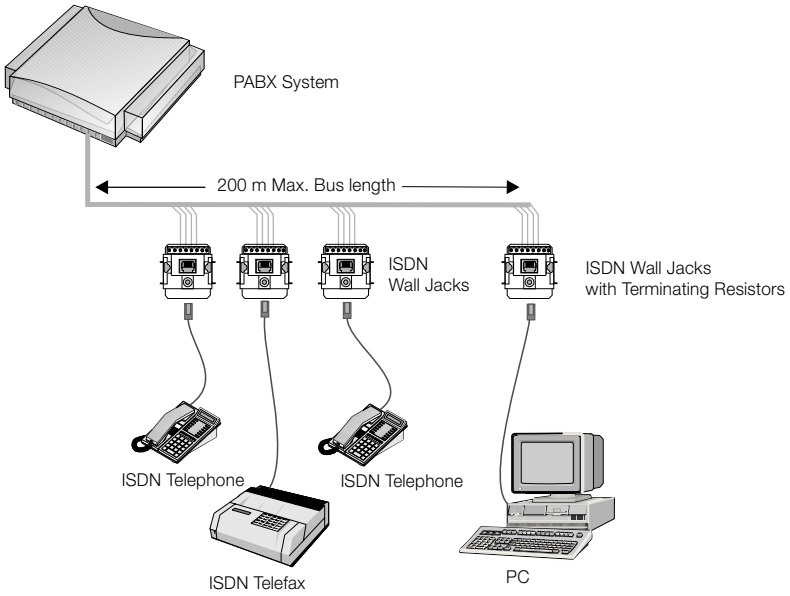

Figure 24: “Limited-Length Passive Bus” Attachment

46.13.2 “Extended-Length Passive Bus”

We strongly recommend not to connect more than three ISDN wall jacks to this type of node. The terminating resistors must be activated in the node device. As a node device, you can use, for example, a commercial telecom distribution panel. The terminating resistors must be deactivated in the subsequent ISDN wall jacks. Switch S01 in the terminal bay of the unit must be set to the “Limited-Length Passive Bus” mode (in the example: gauge wire 0,6 mm).

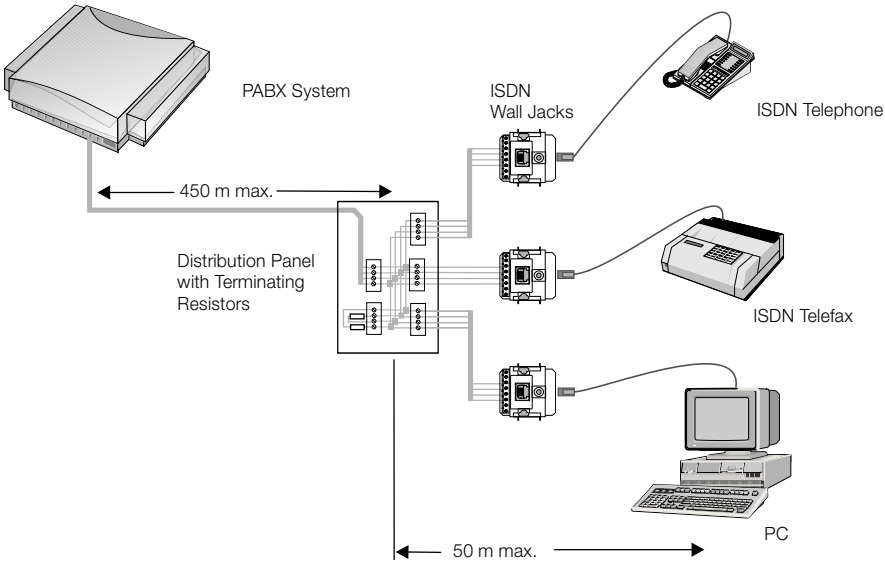

Figure 25: “Extended-Length Passive Bus” Attachment

46.13.3 “Point-to-Point”

This wiring pattern supports **a single** ISDN terminal at a maximum distance of 1000 m (when using gauge wire 0,6 mm) from the PABX system. The 100 Ohm terminating resistors need to be activated in the pertinent ISDN wall jack. Switch S01 in the terminal section must be set to the “Point-to-Point” mode.

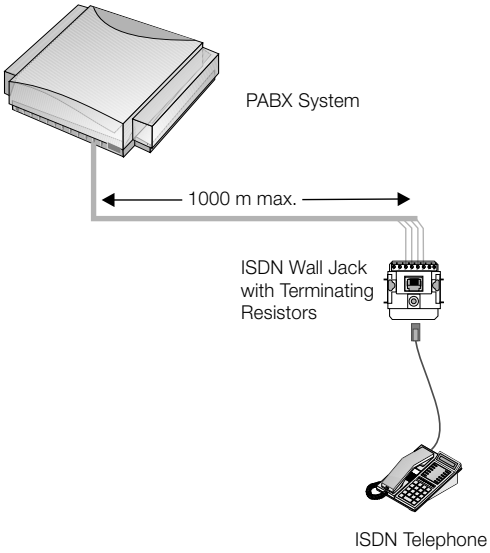

Figure 26: “Point-to-Point” Attachment

46.14 Connecting ISDN Terminals to the In-house ISDN Bus Port

Figure 27 illustrates the wiring for RJ45 wall jacks.

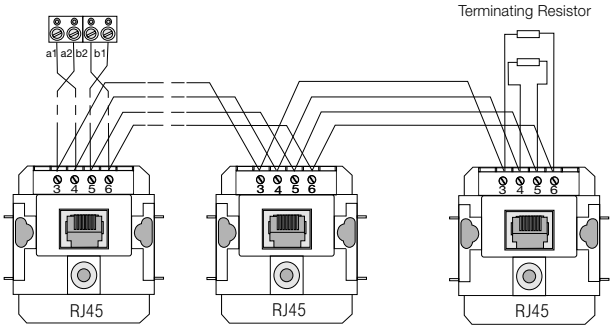

Figure 27: Terminal Wiring Based on RJ45 Wall Jacks

Figure 28 illustrates the wiring for 4...8 RJ45 wall jacks.

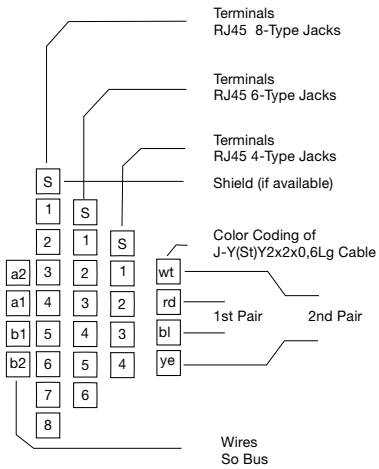

Figure 28: Wiring of RJ45Type ISDN Wall Jacks

46.15 Connecting Analog Terminals

Analog terminals include, for example, telephone sets, multiservice products, Group 2/3 telefax machines and call answering machines designed to connect to the POTS (Plain Old Telephone Service) network or an analog PABX system. These terminals use either pulse dialing or tone dialing. You should only connect tone dialing terminals with a fully functional Flash key to your PABX system. Pulse dialing terminals do not support all of the features offered by your PABX system.

To wire analog terminal equipment remove the cover panel to reveal the two-wire cable terminals a/b 1...a/b 8. When shipped from the factory, the extension numbers 40...47 are allocated to these analog ports. Interconnect the a and b terminals with the 1 and 2 terminals of the wall jacks (see Figure 29).

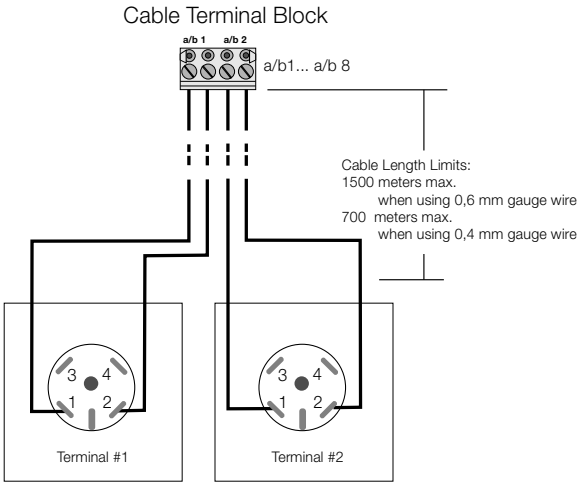

Figure 29: Wiring Wall Jacks for Analog Terminal Equipment

Use some excess length of cable to accommodate future modifications. Please note that telephone sets may require different jacks than other equipment. (In Germany, for example, telephone sets have type F coded connectors while other equipment, such as Group 2/3 telefax machines uses type N jacks.) If in doubt about the shape of the connectors, ask your specialized dealer when purchasing terminal equipment.

Figure 20 shows the screw-type cable terminals for analog terminal equipment.

47 Signaling Connection Charges

When shipped from the factory, the PABX system is preset to send charge metering information (16kHz pulses) via the analog ports a/b1 and a/b2. You can remove jumper J1 for port a/b1 and jumper J2 for port a/b2 to disable the signaling of charge information. The jumpers J1 and J2 are located beneath the printed circuit board cover panel inside of the unit. Before opening the enclosure, power the unit down. Remove the protective cover, then unscrew the two screws in the cable terminal bay and lift off the internal cover panel. Find the jumpers J1 and J2 at the location shown in the drawing below at the left edge of the printed circuit board. Unplug the jumper, then plug it back to one pin only as shown in the drawing below. This avoids accidental loss while the jumper is not in use.

After changing the jumper settings at J1 and J2, replace the covers to the PABX system in the reverse order and power the unit up again.

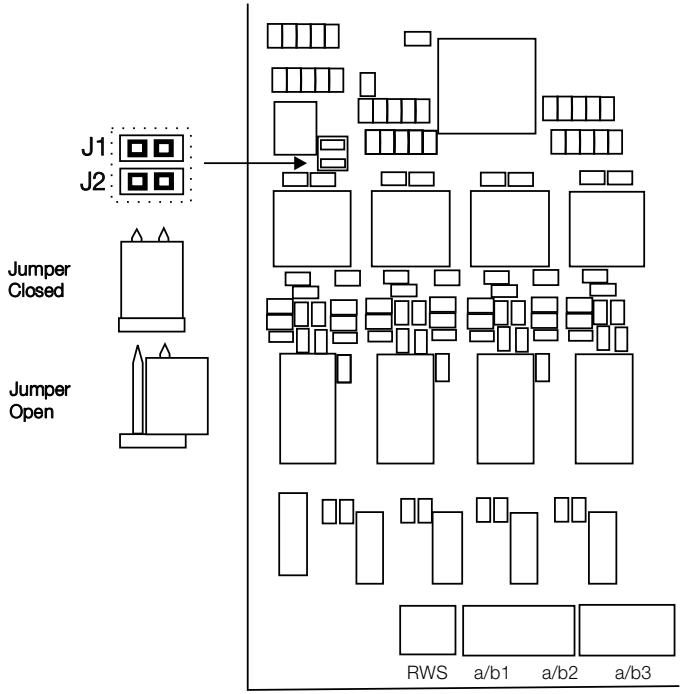

Figure 30: Location of Jumpers J1 and J2

48 Add-On Subassemblies

48.1 Door Intercom Subassembly

The door intercom subassembly (see Figure 31) plugs into the expansion bay shown in Figure 2, page 125, where it is secured by two lateral locking tabs. When installing the board, please make sure that the connector pins are firmly seated in the appropriate holes in the socket and not bent or twisted. To uninstall the subassembly, press the locking tabs to the outside and lift the unit out of the expansion bay, holding it by its spacers. Be careful not to bend or twist the connector pins.
The door intercom subassembly adds the following functionality:

- It provides an interface for a simple unamplified door intercom with a speaker and microphone combination.
- It provides an interface for a doorbell signal.This signal drives telephone sets in addition to the existing doorbell installation.
- It provides an interface for a DC or AC master bell.
- It provides an interface for a bell pushbutton, operated without an external power source.

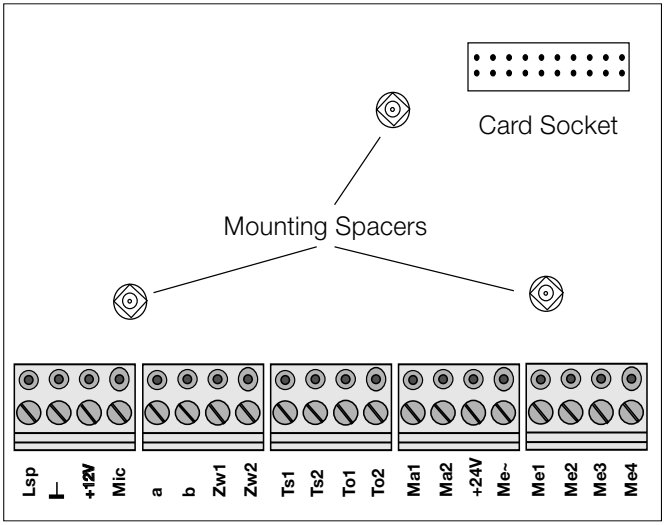

Figure 31: Door Intercom Subassembly

48.1.1 Connecting a Simple Door Intercom Unit

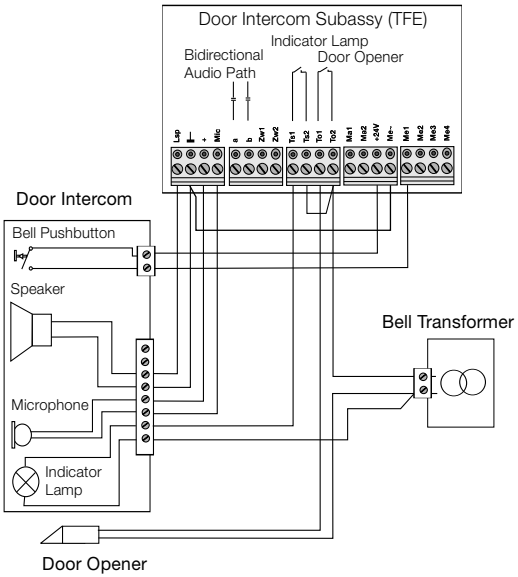

Figure 32: Connecting a Simple Door Intercom

Figure 32 illustrates the use of a door intercom equipped with a microphone and speaker combination. Since there is no amplifier, the bell transformer is only used to power the door opener and the indicator lamp. Please note that the door intercom and bell transformer applications are only intended as examples. When a visitor rings the doorbell, the resulting call will also ring all terminals on the door intercom call distribution list. By adding a call answering machine to the call distribution list, you can welcome a caller at the door intercom with a prerecorded announcement.

Specifications of the Subassemblies:

Speaker	> 8 Ohms, approx. 2 Watts
Microphone	Dynamic microphone or electret microphone with built-in preamplifier
Bell actuator	pushbutton, floating-type
Indicator lamp	Example: This lamp will be on if the door intercom is activated. The lamp specifications depend on the output voltage of the bell transformer.

48.1.2 Connecting the Bell Signal to the Inhouse Doorbell

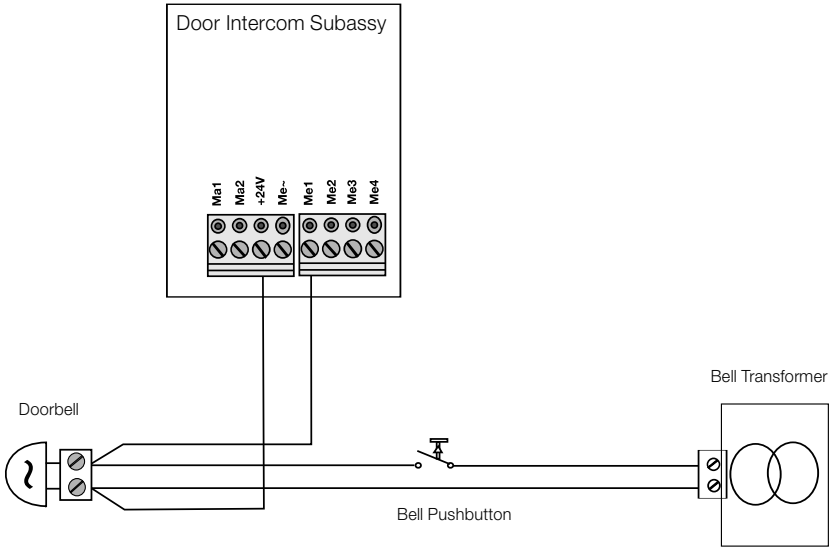

Figure 33: Bell System

Figure 33 illustrates the connection of the door intercom subassembly to an existing doorbell installation. When a visitor rings the doorbell, the resulting call will also ring all terminals on the door intercom call distribution list.

48.1.3 Connecting a Master Bell

The master bell rings whenever an incoming call is received by the PABX system, alerting personnel working, for example, in a large shop or outdoors that a call is coming in. The wiring schematic shown in Figure 34 illustrates an AC-driven bell powered by the PABX system. A DC bell requires an external power source, such as a bell transformer, which replaces PABX system power.

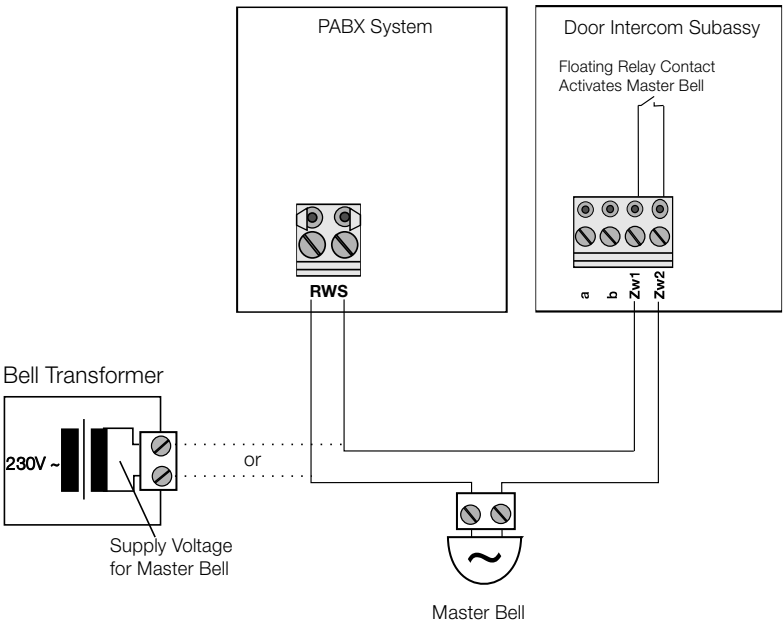

Figure 34: Master Bell

48.1.4 Connecting a Bell Pushbutton

If you wish the terminals on the door intercom call distribution list to respond when a visitor rings the doorbell, you can use the wiring schematic shown in Figure 35.

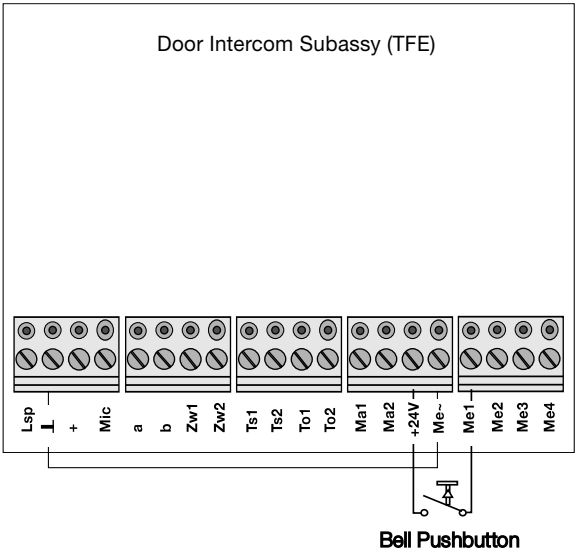

Figure 35: Connecting a Bell Pushbutton

48.2 Backup Power Subassembly (NSP)

The backup power subassembly (see Figure 36) enables users to make calls via the PABX system during outages of 230 V AC line power. The terminal equipment that needs to be available during power outages must be capable of running on backup power.
The NSP subassembly (see Figure 36) plugs into the expansion bay shown in Figure 2, page 125. The ISDN network access port is connected via a ready-made ISDN connection cord supplied with the unit, while the inhouse ISDN bus ports are hard-wired to the unit. The interconnection with the ISDN network access port is made via a ready-made ISDN connection cord supplied with the unit, while the inhouse ISDN bus ports are hard-wired to the unit.

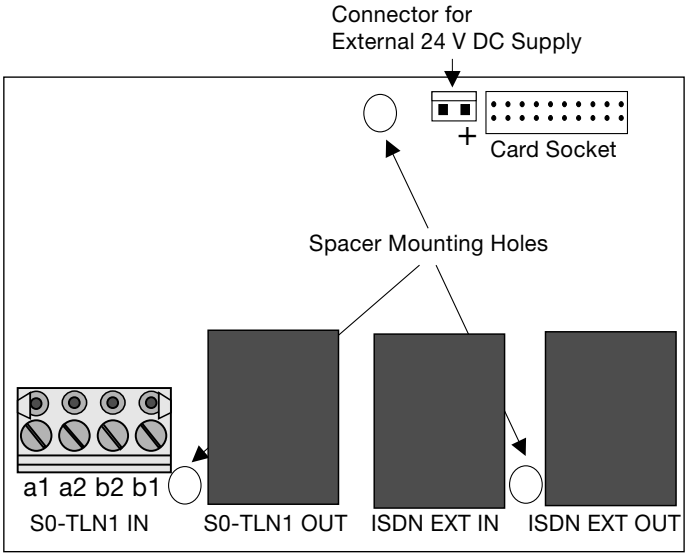

Figure 36: Backup Power Subassembly

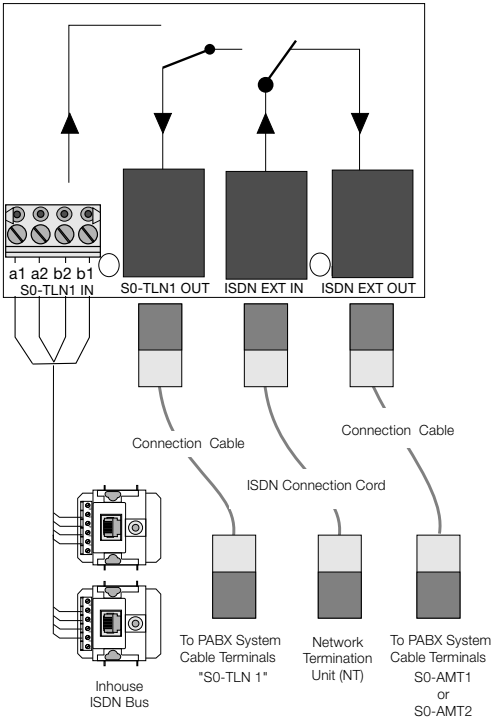

Figure 37: Backup Power Subassembly Block Diagram (Normal Operation)

48.3 Connecting the Backup Power Subassembly to an Existing Door Intercom Subassembly

The backup power subassembly can be used in addition to an existing door intercom subassembly. Plug the door intercom subassembly into the expansion provided for that purpose (see page 144) until the two lateral locking tabs snap into place. When installing the board, please make sure that the connector pins are firmly seated in the appropriate holes in the socket and not bent or twisted. Plug the backup power subassembly onto the spacers with the connectors facing to the front. Connect the connection cord to the two pins of the backup power subassembly, then connect the opposite end of the cord with the GND and +24 V posts on the door intercom subassembly.

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Kommunikationstechnik

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49 Getting Started - User Notes

Depending on whether you have ordered a point-to-multipoint or point-to-point access from your network operator, install the PABX system as outlined in the section “Installing Your PABX System”. Connect all cables and wiring, including 230 AC line power. Your PABX system has a built-in set of extension numbers. When shipped from the factory, the unit is preset to use the inhouse extension numbers listed on page 63. You may flexibly reallocate all extension numbers between 00 and 99 to meet your needs (see page 64). Please avoid using duplicate extension numbers. The acquisition digit for outbound ISDN exchange lines is selectable between 0 and 9.

Caution!

Inhouse extension numbers and exchange line acquisition codes may not have the same leading digits. For example, you cannot use inhouse extension numbers with a leading “9" if the outgoing ISDN line is accessed with the exchange line acquisition digit ”9". These extension numbers need to be stored as MSNs in the ISDN terminals attached to the inhouse ISDN bus (see the section “Entering MSNs” or similar in the instruction manual of your ISDN terminal equipment).

49.1 Getting Started - Point-to-Multipoint

After power-up your PABX system is ready for point-to-multipoint access operation. You may already make inhouse calls using analog terminals. You must allocate the desired extension numbers (8 maximum) to one multiple subscriber number (MSN; see page 67) in order to allow external callers to dial through to individual telephone sets and other attached terminal equipment. Your network operator may already have notified you of the Multiple Subscriber Numbers (MSN) allocated to your access when confirming your order.

49.1.1 Startup Example - Point-to-Multipoint Access

Your network operator has allocated the MSNs 12345, 12346 and 12347 (example) to your ISDN access. You may want an external caller to dial one of the three numbers in order to reach a particular terminal. If your subscriber number is, for example, 12345 and you want to direct calls made to that number to your telefax machine at extension number 40, please proceed as follows:

[↑]	Pick up the handset. You will hear the inhouse dial tone.
[*] [*]	Press the [*] key twice.
[~]	You will hear the acknowledgement signal.
[0] [0] [0] [0]	Enter the four-digit password, for example 0000 (shipping configuration).
[1] [4]	Point-to-multipoint access (ISDN network access port #1): Dial 14.
[0] ... [9]	Dial the desired MSN digit (see table 2 on page 69).
[1] [2] [3] [4] [5]	Dial the first MSN, for example 12345.
[#]	Press the # key to terminate your entry.
[~]	You will hear the acknowledgement signal.
	You can proceed with the remaining MSNs as outlined above, starting with " [1] [4] ".
[1] [6]	To allocate terminals to the MSN, proceed as follows.
[0] ... [9]	Dial the desired MSN digit (see table 2 on page 69).
[4] [0]	Dial the inhouse extension number for the desired terminal, for example 40.
[↓]	Hang up.
	You can proceed with the remaining terminals as outlined above, starting with " [1] [6] ".

The terminals attached to your PABX system can now be dialed up by external callers.

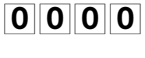
49.2 Getting Started - Point-to-Point

Install the PABX system as outlined in the section “Installing Your PABX System”. Connect all cables and wiring, including 230 AC line power. Your network operator will notify you of your system’s root number and the block of dial-in suffixes allocated to it. Since your PABX system comes readily set up for point-to-multipoint access operation, you need to reconfigure it for the point-to-point access mode now.

49.2.1 Startup Example - Point-to-Point Access

Let us assume that you have received a system root number plus the DDI suffixes 00...49 from your network operator. External callers will have to use the proper suffix to dial through directly to a particular terminal. Accordingly, the subscriber number to be dialed by an external caller in order to reach you is composed of your root number, for example 12345, and the proper direct dial-in suffix 00...49. You may only allocate only DDI suffixes from that set of numbers to your inhouse terminals you want external callers to reach. If an external caller dials an out-of-range DDI suffix, the call will occur on all terminals on the active call distribution list.

49.2.2 Selecting a New Access Mode

	Pick up the handset. You will hear the inhouse dial tone.
	Press the * key twice.
	You will hear the acknowledgement signal.
	Enter the four-digit password, for example 0000 (shipping configuration).
	You will hear the acknowledgement signal.
	Point-to-point access: Dial 10*.
	You will hear the acknowledgement signal.
	To initiate the system root number entry: Dial 11.
	Enter the system root number (skip area code and DDI suffix).
	Press the # key to terminate your entry.

You will hear the acknowledgement signal.

Hang up.

The unit will reset now.

The terminals attached to your PABX system can now be dialed up by external callers. Also, you can dial up external subscribers now.

50 Glossary of ISDN Terms

Terminal Equipment

The term terminal equipment is used to refer to a class of devices that connects to the inhouse telephone wiring system. The most popular items of terminal equipment include telephone sets, call answering machines and telefax machines. ISDN terminal equipment includes include ISDN telephone sets, ISDN (Group 4) telefax machines, ISDN terminal adapters, ISDN add-on boxes and ISDN plug-in cards for PCs.

Outbound Traffic

The term outbound traffic is used to refer to a status where communication is established between an inhouse party attached to the PABX system and an external subscriber to the ISDN network. Outbound traffic can carry telephony or other services supported by the ISDN.

Call

The term call is used to refer to a status where a connection is established between two or more parties attached to the PABX system. Calls may either be inhouse or outbound connections.

Inhouse Connection

The term inhouse connection is used to refer to a status where a connection is established between any two parties attached to the PABX system, including parties attached to the inhouse ISDN buses #1 though #3 and parties with analog terminals attached to the analog section of the PABX system. Inhouse connections are free of charge.

ISDN

ISDN stands for Integrated Services Digital Network. ISDN is a digital telecommunications network that provides end-to-end transmission of voice, data and signaling information.

Basic Rate ISDN Access

The basic rate ISDN access is a S0 interface offered by your network operator. It consists of three dedicated channels, including two bearer channels (B) and one data channel (D) with an overall data rate of 144 kbps. The two bearer channels (B) can carry 64 kbps of payload data, while the remaining D-channel is used for signaling information.

ISDN Bus

An ISDN bus is a wiring system based on dual copper pair (4-wire) cable that serves up to twelve RJ45 wall jacks for ISDN terminals attached to a PABX system. While cable lengths and the number of attached terminals may vary, an ISDN bus supports a maximum of 8 terminals.

Ringing

Ringing is the signal used by old-day telephone sets to alert the user of an incoming call. For reasons of simplicity, this term has been retained with new terminal equipment, although they may use very different means of announcing incoming calls. With PC-based ISDN applications, calls may, for example, be announced by the built-in speaker of the computer or by an on-screen message.

Light Emitting Diode, LED

An LED is a semiconductor lamp that draws extremely low amounts of current.

Network Termination Unit (NT or NTU)

The network termination unit is a small box installed by the network operator on the customer's premises. It interfaces the ISDN network with the inhouse ISDN equipment. Its main function consists in converting the two-wire office cable (U_{k0}) to the four-wire cable (S_0) used for inhouse installation.

S_0 Interface

This interface supports the attachment of terminals to the basic rate ISDN access. It is internationally standardized. The physical implementation of this interface consists of the NT and four-wire copper cables. The S_0 Interface may either be configured as a point-to-point (direct network interface for your PABX system) or as a point-to-multipoint (bus) topology. This interface is installed through the network operator or a qualified subcontrator.

51 Specifications

Power cord:	European standard low-profile to DIN VDE 620
Line voltage:	230V AC (207V ... 243V)
Nominal power consumption:	65 VA
Line frequency:	48 Hz ... 52 Hz
Protection class:	II
Fusing:	primary 630 mA
Length of power cord:	approx. 2 meters
Length of ISDN connection cord:	approx. 2 meters
ISDN network access port:	DSS1 protocol-based, point-to-multipoint or point-to-point
Inhouse ISDN bus port:	DSS1 protocol-based, point-to-multipoint
ISDN interfaces	S_0, 38V DC remote power
Channel structure	B+B+D
Analog ports:	
Remote power:	balanced, 35 mA at 600 Ohm
Max. cable lengths for telephone set attachment with standard installation cable:	0.6 mm wire dia = 2400 meters 0,4 mm wire dia = 1000 meters
Dialing method:	tone dialing to CCITT Q.23
Mark length:	> 40 ms and <100 ms
Break length:	> 80 ms
Tone detection thresholds:	-10 dBm ... 0 dBm
Ringing voltage:	Urms ≥ 40 V AC
Ringing frequency:	50 Hz ± 8%
Dimensions W x H x D:	360 x 275 x 90 mm
Approx. weight:	2.8 kg

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Short Reference

This short reference provides basic instructions for using analog terminal equipment. Should problems occur when using ISDN terminals, please refer to the instruction manual of that ISDN terminal to learn more about its functionality. You can use the fields marked ☐ to note your inhouse extension numbers and acquisition digits for outbound ISDN lines, so you have them handy when you need them.

Call pickup

↑ * 4) ↓	Call pickup

Inhouse

↑ ▦) ↓	Making inhouse calls

Outbound

↑ 0 ▦) ↓ ↑ ☐ ▦) ↓	Making outbound calls (select an exchange line acquisition mode)
↑ * 0 ▦) ↓ ↑ * 8 1 ▦) ↓ ↑ * 8 2 ▦) ↓	

Block Dialing

↑ * 5 5 0 ▦ #) ↓	Block dialing
↑ * 5 5 * 8 1 ▦ #) ↓	Block dialing via ISDN network access port #1
↑ * 5 5 * 8 2 ▦ #) ↓	Block dialing via ISDN network access port #2

Automatic Exchange Line Acquisition

↑ * 5 2 ↓	Enables automatic exchange line acquisition
↑ * # 5 2 ↓	Overrides automatic exchange line acquisition (if ISDN network access port is available)

	Overrides automatic exchange line acquisition (if ISDN network access port is busy)

Transferring Calls

	Transfers a call to an inhouse extension with prior notice
	Transfers a call to an inhouse extension without prior notice
	Enquiry call
	Terminates an enquiry call (analog terminal equipment only)
	Externteilehmer verbinden

Broker's Call

	Broker's Call (enquiry call)
	Switches parties during a broker's call

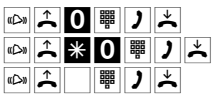
Automatic Callback

	Places an automatic callback request
	Cancels an automatic callback request

Three-Party Conference

	Initiates a three-party conference (enquiry call to second party)
	Launches the three-party conference

ISDN Line Reservation

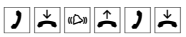
	Reserves an ISDN Line (if outbound ISDN lines are busy)
	Reserved ISDN line becomes available (select an exchange line acquisition mode)

	Cancels ISDN line reservation

Abbreviated Dialing

	Dials a prestored abbreviated dialing Number

Call Waiting

	Disables the Don't Disturb feature
	Enables the Don't Disturb feature
	Picks up a waiting call
	Accepts a waiting call

Call Distribution Lists

	Selects Day call distribution list #1
	Selects Night call distribution list #2

Call Rerouting

	Enables immediate call rerouting
	Enables delayed call rerouting
	Enables call rerouting on busy
	Cancels call rerouting

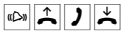
Project Numbers

	Enter a project number and
	dial using a project number
	Select a project number for an outbound call

Call Answering Machine

	Picks up a call from a call answering machine

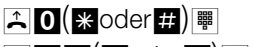
Door Intercom

	Accepts a call
	Actuates the door opener
	Selects door intercom call distribution list #1
	Selects door intercom call distribution list #2

Multifunctional Port

	Multifunctional port: Group 3 telefax
	Multifunctional port: Analog telephony
	Multifunctional port: ISDN telephony

Keypad

	Initiating Special Services via the Keypad. Ask your network operator for instructions using the Keypad.

Type Approval:

Q119
253F

elmeg
Kommunikationstechnik

CE 0188 X

This product meets the requirements of the following EU directives:

91/263/EEC	Telecommunications Terminal Equipment.
73/23/EEC	Low-Voltage Equipment.
89/336/EEC	Electromagnetic Compatibility.

The elmeg C68 - elmeg C88 bears the CE mark as a sign of standards compatibility.

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Germany

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